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Information flows and smart disclosure of financial data: A framework for identifying challenges of cross boundary information sharing

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ABSTRACT

The governance of financial markets in the U.S. is structured around financial products which in some cases results in overlapping regulatory responsibility, intricate and complicated relationships among the various parties and role confusion. These intricate relationships are often complicated by informal and ad-hoc information sharing practices across the regulators. This situation has been recognized as contributing to financial market risks and limiting the potential of smart disclosure policies to benefit financial market stakeholders. This paper adapts an existing framework for information sharing and integration to the complex environment of financial market regulation (FMR) to present an argument for the criticality of effective cross-boundary information sharing to financial regulators seeking to establish robust governance of financial markets. The framework is then used to outline the challenges to information sharing and integration in FMR and to help model the related information flows. Current literature and a recent study of information sharing in FMR are used to identify key actors in FMR information sharing relationships to outline the challenges faced in this unique context and the resulting risk if these challenges go unaddressed. In addition, this paper showcases an example of smart financial apps to illustrate the potential impact of information sharing and integration challenges on smart disclosure policies.

1. Introduction

Non-systematic and ad-hoc information sharing practices among financial market regulatory agencies are regarded as key contributors to the 2008 financial crisis (BIS, 2010; Bradley, 2011; Brummer, 2010; FSB, 2011; IMF, 2007; Pardo, Sayogo, & Canestraro, 2011; Tarullo, 2010). The crisis was a case in point of how ineffective information sharing hinders supervisory authorities from detecting vulnerabilities in global financial markets (IMF, 2007). But the impact of constrained and ineffective information sharing on market regulation was well-known long before 2008. A 2004 report by the U.S. Government Accountability Office (GAO) cited vulnerabilities caused by gaps in information sharing and integration, and called for routine and systematic information sharing across financial regulators (GAO, 2004). The critical nature of effective information sharing for monitoring of financial markets, and the consequences of gaps in such capability, are also increasingly recognized by a range of national and international organizations (BIS, 2010; FSB, 2011; IMF, 2007). Information exchange standards, expanded sharing of more detailed data and cross-border cooperation are considered to be necessary for making information sharing possible, and ensuring that financial regulators meet their responsibilities.

This conceptual paper describes the challenges facing systematic information sharing in the financial market regulation (FMR) context, and aims demonstrates the benefits of improved information sharing through smart disclosure of financial data. Our work is based on a combination of in-depth literature review and an overview of one case study of smart disclosure of financial data. While previous work touched upon some FMR challenges, including the role of effective information sharing (e.g. Pardo et al., 2011), identification of those involved in the sharing relationship, their role in sharing processes, and the challenges and risks to the sharing process in the context of FMR are only partially understood. We review extant literature to map current actors in FMR, specify their relationships to each other, and identify challenges and risks accompanying information sharing for each of the actors. This paper uses the model of inter-agency information integration and sharing proposed by Gil-Garcia, Pardo, and Burke (2010) to frame our discussion. The framework focuses on systematic inter-governmental

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information sharing, which makes it particularly relevant for understanding of FMR. Other information sharing frameworks focus mainly on private entities (eg. see Park, Gu, Leung, & Konana, 2014; Sun & Yen, 2005), collaborative partnerships (eg. see Dantas & Seville, 2006), or the technical aspect of information sharing (eg. see Liu & Chetal, 2005).

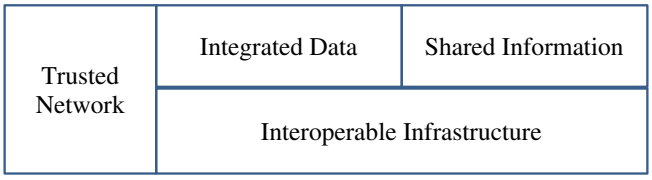
The paper also discusses the likely effects of systematic information sharing challenges on smarter governance of financial markets by showcasing an example of a smart application for financial data. In this paper, smart financial applications, or more popularly and herein, shortened as "apps", are defined as software applications used on mobile devices or via an online browser that enable processing of financial data to support consumers making smart decisions. We argue that the implementation of smart disclosure in FMR could facilitate the creation of smart monitoring and oversight through smart mobile or web financial applications, thus improving the governance of financial markets. As argued by Lee, Hancock, and Hu (2014), the forefront of smarter government innovations is the technological or instrumental dimensions which refers to the applications and tools for delivering the smart services. We thus posit that smart apps add additional layers of monitoring and complement the effectiveness of monitoring and oversight by financial regulators. Smart apps are designed to change complex financial information into manageable and easy to understand information which then minimizes the occurrence of financial fraud and wrong investment. Through smart apps, the "general" investor could make investment decisions more wisely and evaluate financial product offerings more thoroughly.

The remainder of the paper is organized into five sections. Section two introduces the information sharing and integration framework used to frame our discussion, as well as an overview of smart disclosure policy and open data based financial tools. Section three describes the research approaches used in this paper focusing on the identification of the literature and the case selection. Section four starts with an introduction of the primary actors in FMR information sharing followed by a discussion of the challenges facing FMR in their efforts to share information. Section five demonstrates the benefits of cross-boundary information sharing in facilitating smarter disclosure of financial data and how such disclosure can support public innovation and lead to smarter governance. Section six provides concluding remarks, future research direction and practical advice that government managers may take into account to help them understand the challenges of and capability needed for systematic information sharing in financial market regulation.

2. Information sharing and integration framework and smart disclosure

2.1. Information sharing and integration framework

This paper uses the Gil-Garcia et al. (2010) framework to examine information sharing in FMR. This framework considers the complexities inherent in Cross Boundary Inter-agency Information Sharing (CBIIS) and the social and technical elements important to its understanding (Pardo & Tayi, 2007). Gil-Garcia et al. (2010) used extensive literature review and findings from eight case studies of inter-agency information sharing as the basis for their framework. Gil-Garcia et al. conceptualized an integrative framework for information sharing (Fig. 1) comprised of four components: a) interoperable technical infrastructure, b) integrated data, c) shared information, and d) trusted social network.



Source: adapted from Gil-Garcia et al., 2010

Fig. 1. Four components of inter-agency information integration and sharing.

The first component, interoperable technical infrastructure (a), is the most critical element for systematic sharing and integration of information across different agencies (Pardo, Gil-Garcia, & Burke, 2008). Gil-Garcia et al. (2010) identified the importance of technical aspects of interoperability for both hardware and software. They argue that despite the technical difficulties in developing interoperability, an interoperable system is found to make sharing information easier and provide accurate, protected, and usable information.

The second component, integrated data (b), is critical for sharing information among multiple organizations particularly when information to be shared is in different formats. Different data formats restrict the comparability of information and limit capability for integration. The authors claim that common data elements will significantly improve sharing and integration of information across organizational boundaries (Gil-Garcia et al., 2010).

The third component is shared information (c). Gil-Garcia et al. argue that shared information represents the identification of tacit and explicit knowledge in agencies. Such identification of knowledge is essential to effective information sharing in two ways. First, identification and understanding of shared information across different agencies is essential to frame the design of information sharing systems. Second, assessment of shared information provides an initial step to building integrated data through the identification and classification of shared information against information that is not yet shared. They further argue that assessment of currently shared information will facilitate understanding of the breadth and scope of proposed information sharing systems (Gil-Garcia et al., 2010). Such assessment, they argue, will influence the amount of needed resources, the sophistication of information sharing strategies, the complexity of technical requirements, and the shape of information sharing policies.

The fourth component is trusted networks (d). Trust among sharing partners is considered a prerequisite to successful sharing (Pardo, Gil-Garcia, & Burke, 2008; Pardo, Gil-Garcia, & Luna-Reyes, 2008). A network of trusted actors significantly influences the effectiveness of communication and reduces resistance to information sharing. Additionally, the level of trust is important to reducing turf barriers and concerns over information misuse (Gil-Garcia et al., 2010).

2.2. Smart disclosure of financial data

In January 2009, the Office of Information and Regulatory Affairs (OIRA) of the U.S. Office of Management and Budget issued a Memorandum on Disclosure and Simplification as Regulatory Tools. The memorandum provides guidance for the use of disclosure as a regulatory approach, including "smart disclosure" policy. Smart disclosure is defined as "timely release of complex information and data in standardized, machine readable formats in ways that enable consumers to make informed decisions" by providing information upon which choices can be made by the public (Sunstein, 2011). The basic premise of smart disclosure is giving more power to the general public by transferring control of personal data from the hands of corporate interests to the public (Cobb, 2012). It is argued that by providing more control of information to the public, smart disclosure has the potential to promote innovation, economic growth and job creation. Smart disclosure was initially applied in the field of energy consumption (Green Button) and health services (Blue Button), and consequently used in various areas including commerce, education, safety, and global development and finance.

Proponents of smart disclosure argue that such policies can also be used to help consumers in making informed decisions with regards to financial products (Willis, 2013). Extant literature posits that consumers' decisions are commonly affected by behavioral biases resulting