THE EFFECTS OF IFRS, FINANCIAL MARKET REGULATION, AND NATIONAL ECONOMIC CULTURE **ON INVESTORS' HERDIN**G PRACTICE

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FACULTY OF BUSINESS AND ACCOUNTANCY
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THE EFFECTS OF IFRS, FINANCIAL MARKET REGULATION, AND NATIONAL ECONOMIC CULTURE ON INVESTORS' HERDING PRACTICE

ABSTRACT

The purpose of this study is to investigate whether the EU adoption of International Financial Reporting Standards (IFRS) and reform of financial market regulatory infrastructure promote or inhibit investors' herding practice in the equity markets. Utilizing a modified non-linear model of cross-sectional absolute deviation (CSAD), the empirical findings of this study corroborate the notion that effective financial regulations encourage fundamental-based trading and reduce irrational investment behavior. In particular, with regards to herding bias, at face value, this study finds that the phenomenon is significantly practiced in the EU equity markets following the EU financial regulatory changes. However, taking a closer look at this evidence, it is found that the observed herding phenomenon around the new regulatory regime is largely driven by fundamental information. Hence, suggesting that improvement in information environment emanating from the EU financial regulatory changes induces investors to trade in a contemporaneous manner without necessarily imitating the actions of others but due to identical reaction to common fundamental information. Similarly, the study finds that the new regulatory changes seem not to be the only instigator of the observed fundamental based herding, instead, national economic culture; particularly, the degree of individualism and masculinity is found to be another contributing factor. The findings of this study are expected to be of interest to academics, regulators, and policymakers in performing a cost-benefit analysis of the financial regulations. They are also expected to be useful to market participants who make portfolio decisions based on firms' fundamental variables, treating them as principal indicators of future market movement.

Keywords: IFRS, Herding, Financial market regulation, Equity Markets.

KESAN IFRS, PERATURAN PASARAN KEWANGAN, DAN KEBUDAYAAN EKONOMI KEBANGSAAN TERHADAP PRESTASI HIDUP PELABUR

ABSTRAK

Tujuan kajian ini adalah untuk menyiasat sama ada penggunaan Piawaian Pelaporan Kewangan Antarabangsa (IFRS) dan pembaharuan infrastruktur pengawalseliaan pasaran kewangan menggalakkan atau menghalang amalan pemabuk pelabur dalam pasaran ekuiti. Dengan menggunakan model non-linear penyelarasan mutlak rentas kerangka (CSAD), kajian ini menggambarkan bahawa hipotesis yang memaparkan bahawa peraturan kewangan yang berkesan menggalakkan perdagangan berdasarkan asas dan mengurangkan tingkah laku pelaburan yang tidak rasional telah disahkan oleh penemuan empirikal sekarang. Sebagai contoh, berkaitan dengan tingkah laku herding, pada nilai muka, kajian mendapati bahawa fenomena ini amat dipraktikkan dalam pasaran ekuiti EU berikutan perubahan pengawalseliaan kewangan EU. Bagaimanapun, melihat dengan lebih jelas bukti ini, didapati fenomena penggembalaan yang diamati sebahagian besarnya didorong oleh maklumat asas. Ini menunjukkan bahawa peningkatan dalam persekitaran maklumat yang berpunca daripada perubahan peraturan kewangan EU mendorong pelabur untuk berdagang dengan cara yang sezaman tanpa meniru tindakan orang lain tetapi disebabkan reaksi serupa terhadap maklumat asas yang sama. Di samping itu, kajian itu juga mendapati bahawa perubahan peraturan yang baru tidak muncul sebagai satu-satunya pendorong penggembalaan berasaskan asas yang diamalkan, malah budaya ekonomi negara; terutamanya, tahap individualisme dan maskuliniti didapati faktor penyumbang yang lain. Penemuan kajian ini dijangka menarik minat ahli akademik, pengawal selia, dan pembuat dasar dalam melaksanakan analisis kos faedah peraturan kewangan. Mereka juga dijangka berguna kepada peserta pasaran yang membuat keputusan portfolio berdasarkan pembolehubah asas firma, merawat mereka sebagai petunjuk utama pergerakan pasaran masa depan.

Keywords: IFRS, Herding, peraturan pasaran kewangan, Pasaran Ekuit

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LIST OF SYMBOLS AND ABBREVIATIONS

IFRS	:	International Financial Reporting Standards
CSSD	:	Cross Sectional Standard Deviation
CSAD	:	Cross Sectional Absolute Deviation
EMH	:	Efficient Market Hypothesis
CCK	:	Chang, Cheng & Khorana (2000)
CH	:	Christie and Huang (1995)

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CHAPTER 1: GENERAL OVERVIEW OF THE THESIS

1.1 Introduction

This chapter gives an overview of the whole work and is organized as follows;

Section 1.2 presents the background of the study. Section 1.3 discusses the problem statement and the motivation of the study. Section 1.4 outlines the research questions. This is followed by the corresponding research objectives in section 1.5. The significance of the study is presented in section 1.6. Section 1.7 outlines how the thesis is structured. Section 1.8 concludes the chapter.

1.2 Background of the study

Since the advent of behavioral finance paradigm in the 1980s, a substantial amount of research in finance has been devoted to the employment of cognitive psychological theory with conventional finance to provide explanations for why investors make irrational investment decisions (Hachicha, 2010; Musse & Echchabi, 2015). A considerable part of this research has been centered on a particular issue of herding behavior, which hitherto used to be confined typically within the realm of the rational finance paradigm (Chang & Lin, 2015). Academic interest in herding behavior has been notably intense in the aftermath of the recent financial crises (Mobarek, Mollah, & Keasey, 2014). A number of these crises have been attributed to investors' behavioral anomalies (Galariotis, Krokida, & Spyrou, 2015; Galariotis, Krokida, & Spyrou, 2016; Lütje & Menkhoff, 2003), particularly herding behavior (Galariotis, et al., 2015; Litimi, BenSaïda, & Bouraoui, 2016).

Behavioral finance literature construes herding as a tendency of investors to ignore their market informational analyses and mimic the observed actions of others, even when their private signals suggest otherwise (Dang & Lin, 2016; Garg & Gulati, 2013; Garg & Jindal, 2014; Golarzi & Ziyachi, 2013; Spyrou, 2013), on the assumption that basing their

investment decisions on the available information is likely to incur them more costs and less benefits. The activities of this class of traders have often been seen as the reason why market decline fuels further market declines and market increase fuels further market increases (Lakonishok, Shleifer, & Vishny, 1992), thus leading to excessive volatility in the market as well as economic bubbles, and ultimately market crashes (Bowe & Domuta, 2004; Javaira & Hassan, 2015).

Although academic finance literature has advanced several explanations as to why investors exhibit herding behavior in the financial market, such behavioral pattern is usually associated with opaque information environment (Javaira & Hassan, 2015; Yao, Ma, & He, 2014; Zhou & Lai, 2009), lax regulatory infrastructure (Bikhchandani & Sharma, 2000), weak accounting standards (Guney, Kallinterakis, & Komba, 2017; Prosad, Kapoor, & Sengupta, 2012), and high information acquisition costs (Duasa & Kassim, 2009). These arguments have featured in prominent academic literature over the last few decades. In times of market turbulence, these arguments accentuate (Antoniou, Koutmos, & Pericli, 2005; Galariotis et al., 2015). The popular view tends to revolve around call for more regulatory actions to lessen the effects of herding and other investors' irrational exuberance, on the premise that these activities increase the fragility of the financial market (Christensen, Hail, & Leuz, 2016; Grosse, 2017; Hou, McKnight, & Weir, 2013; J. Zhou & Lee, 2013).

Therefore, the growing clamor for stringent financial regulations has led to a number of regulatory initiatives (Ayres & Mitts, 2015; Jun, 1993), with many countries around the world indicating firm commitments to beef up their financial regulatory infrastructure in order to mitigate market anomalies and stimulate market efficiency and stability (Cumming, Johan, & Li, 2011; Cumming, Knill, & Richardson, 2015; Daske, Hail, Leuz, & Verdi, 2013; Lo, 2013). For example, in August 2000, the U.S Securities and Exchange Commission (SEC) introduced a new regulation called Regulation Fair Disclosure (Reg.

FD) with the aim of reducing information asymmetry and ensure that firms' material private information is fair and accessible to all investors (Saunders, & Shao, 2015; Yu & Webb, 2017). The SEC and the advocates of Reg. FD have stressed that the new regulatory regime would lead to fairer markets by ensuring the immediate dissemination of information to all the market participants simultaneously (Irani & Karamanou, 2004). Nevertheless, the academic debate on the costs and benefits of this regulation is still ongoing, and the empirical evidence is so for mixed (Gomes, Gorton, & Madureira, 2007; Li et al., 2015; Petacchi, 2015).

In Europe, however, the EU policymakers have responded with a number of ambitious directives aimed at protecting investors, enhancing quality disclosure, and reducing financial market abuses (Christensen, Hail, & Leuz, 2013; Christensen et al., 2016; Christensen, Lee, & Walker, 2007; Helleiner, Pagliari, & Zimmermann, 2010). One significance regulatory directive that receives a lot of accolades is the adoption of global reporting benchmark via legislation; the Reg. EC1606/2002. The new directive mandates all the EU member states to adopt IFRS as from January 2005 (Palea, 2013).

The hope behind the adoption of IFRS in the EU and elsewhere is, to among others, alleviate investors' decision making problems, by offering more transparent, more comparable and high quality reporting system in the corporate information environment (Hope, Jin, & Kang, 2006; Lambert, Hübner, Michel, & Olivier, 2006). To ensure the protection of investors and restore confidence in the capital market (Singleton-Green, 2015). This would be made possible through the provision of adequate, transparent, and reliable information to all the market participants for economic decisions (Lambert et al., 2006; Lambert, Leuz, & Verrecchia, 2007; Lambertides & Mazouz, 2013). The advocates of this planetary set of reporting benchmark further claim that the standards would reduce the cost of capital, (Ball, 2006; Daske, 2006; Shi & Kim, 2007; Shima & Yang, 2012), facilitate international capital mobility (Hamberg, Mavruk, & Sjögren, 2013; Hamberg,

Paananen, & Novak, 2011; Soderstrom & Sun, 2007), which in turn, increases firms' liquidity and contributes towards effective and cost-efficient functioning of the capital markets (Barth, Landsman, & Lang, 2008; Cai & Wong, 2010; Chua, Cheong, & Gould, 2012). However, whether these assumptions regarding the quality of this new reporting regime are defendable still remain debatable.

Other notable regulatory changes that took place in the EU include; the enactment of Market Abuse Directive (MAD) in 2003, aim at reducing market abuses and address the situations where investors have been arbitrarily disadvantaged. Then there was Transparency Directive (TPD) in 2004, which addresses issues with corporate disclosure. The Markets in Financial Instruments Directive (MiFID) was released in 2007, designed to enforce more transparent investor protection across the EU financial markets (Cumming et al., 2011). Although these bundle of regulatory reforms seems to have discrete (if not closely related) objectives, they can, however be divided into two major groups; change in financial reporting regime (IFRS adoption) and reform of financial market regulatory infrastructure (Christensen et al., 2013; Christensen et al., 2016).

Surprisingly, despite the above series of regulatory initiatives and the motive behind their enforcement, recent evidence indicates that investors' trading anomalies, still remain persistent (Jang, 2017), particularly herding behavior (Blasco, Corredor, & Ferreruela, 2017; Chang & Lin, 2015; Clements, Hurn, & Shi, 2017; Economou, Kostakis, & Philippas, 2011; Galariotis et al., 2016; Galariotis, et al., 2015; Li, Rhee, & Wang, 2016). This raises a very important question as to what actually constitutes the effects of these major regulatory changes on investors' trading patterns in the financial markets. This, the researcher argues, is an important empirical question for which an empirical answer is sought.

Exploring this question is significant, given that despite the enormous empirical evidence on the economic and informational consequences of the recent financial regulatory changes (Bailey, Li, Mao, & Zhong, 2003; Ray Ball, 2006; Ball, Li, & Shivakumar, 2015; Chau, Dosmukhambetova, & Kallinterakis, 2013; Christensen et al., 2016; Devalle, Onali, & Magarini, 2010; García, Alejandro, Sáenz, & Sánchez, 2017; Gassen & Sellhorn, 2006; Gong, Sophia, & Wang, 2016; Horton, Serafeim, & Serafeim, 2013; Houqe, Easton, & van Zijl, 2014; Johansson, Hjelström, & Hellman, 2016; Lambert et al., 2007; Leuz & Wysocki, 2016; Li et al., 2015; Shi & Kim, 2007; Tan, Wang, & Welker, 2011), scholarly attempts to test the direct effect of these regulatory initiatives on investors' trading patterns is limited (Arya, Glover, Mittendorf, & Narayanamoorthy, 2005; Beneish & Yohn, 2008; Hamberg, Mavruk, & Sjoegren, 2009; Hamberg et al., 2013).

This sounds surprising given that the advocate of financial regulations have argued that credible implementation of such regulations should serve as a commitment to transparency (Hail & Leuz, 2006), that would ensure that investors' uncertainty is reduced and their confidence is boosted, which in turn would promote fundamental-based trading (Bushee & Leuz, 2005; Chau et al., 2013; Lambertides & Mazouz, 2013; Verrecchia, 2001). Intuitively, to the extent that the new regulatory regime improves transparency, market informational efficiency is expected to improve due to enhanced trading on fundamentals variables (Armstrong, Barth, Jagolinzer, & Riedl, 2010; Brüggemann, Hitz, & Sellhorn, 2013). The increased in information-based trading should also increase the proportion of informed investors in the market and reduce the intensity of irrational investment behaviors that are by nature informational (Chau et al., 2013). However, whether these arguments are justifiable is not clear a priori, and the empirical evidence is so far mixed (Arya, Glover, Mittendorf, & Narayanamoorthy, 2005; Christensen et al., 2011; Leuz & Wysocki, 2016). Thus, clear motivation for further empirical research.

1.3 Problem Statement and motivation of the study

Understanding the behavior of market participants has been a challenging mission for practitioners, portfolio managers and even academics (Demirer & Kutan, 2006). The theoretical and empirical evidence also establishes that irrationality of security investors has often been blamed for major boom and bust in the financial market (Chang, Cheng, & Khorana, 2000; Prosad et al., 2012). However, lack of corporate transparency, less publicly available information, lax regulatory infrastructure, and weak accounting standards are said to be the leading causes of investors' loss of confidence, and increase the tendency of investors' behavioral anomalies like herding and noise trading, which ultimately pose to undermine the stability of the financial markets (Gelos & Wei, 2002; Guney et al., 2017; Prosad et al., 2012).

Interestingly, in recent years, there has been a growing consensus among the regulators and policymakers for the need to strengthen financial regulatory infrastructure in order to lessen the effects of investors' irrational exuberance and other market anomalies (Gelos & Wei, 2002; Grosse, 2017; Helleiner et al., 2010; Leuz & Wysocki, 2016). This development has led to a diverse regulatory and legislative reactions, with many countries around the world demonstrating strong commitments to toughen their financial regulatory framework in order to restore investors' confidence, and promote market efficiency and stability (Cumming et al., 2011; Daske et al., 2013; Palea, 2013).

At the EU level, for example, the Financial Services Action Plan (COM 1999, 232, 11.5.1999) maps out the first set of improvements to the EU legislative framework for financial markets (Christensen et al., 2013; Christensen et al., 2016). As part of this effort, the Committee of Wise Men on the Regulation of European Securities Markets was set up by the Council of the European Union in July 2000 and submitted its initial report (Wise Men, 2000) on November 9th, 2000, presenting a 4-step approach that would enhance the EU financial regulatory infrastructure (Di Giorgio & Di Noia, 2001). Another

major regulatory change is the adoption of IFRS reporting benchmark. In fact, the acceptance and adoption of IFRS by the EU have been construed to be one of the major triggers behind the widespread acceptance and adoption of IFRS around the world. The EU Directive Reg. No 1606/2002, for instance, requires all member states to comply with IFRS reporting requirements as from 1/1/2005. The economic argument of all the aforementioned regulatory changes is that the severity of the prevailing market anomalies has indicated that the earlier regulations have failed to keep abreast of the fast evolving development of the financial markets and the investors' myriad practices (Dodd, 2002; Kim, Koo, & Park, 2013).

However, despite the far-reaching efforts of the above regulatory initiatives to curtail market anomalies, recent evidence has shown that investors' behavioral biases still remain cryptic and challenge the most precise and predictive classical economic models (Babajide & Adetiloye, 2012; Jang, 2017; Litimi et al., 2016). Among these behavioral tendencies, herding practice has been a subject of particular concern (Chang & Lin, 2015). The term herding became particularly popular following the recent financial crises (Mobarek et al., 2014). From the Asian financial crisis in the 1990s, the global financial crunch of 2008, and to the recent Eurozone crisis in 2009. All these inexplicable crises and much more have been attributed to investors' behavioral anomalies (Galariotis, et al., 2015; Lee & Lee, 2015; Lütje & Menkhoff, 2003), particularly herding behavior (Lee & Ahn, 2017).

The above assertions have been reinforced by several EU officials, media outlets, and the market participants who declared that investors' herding behavior was largely responsible for aggravating the recent EU financial crisis and spill over volatility from countries that receive cross-border financial packages (Galariotis et al., 2015; Galariotis et al., 2016). Specifically, the EU Economic and Monetary Affairs Commissioner (Olli Rehn) claimed during the recent agreement of the Irish aid-package that there was plenty

of investors behavioral anomalies in the EU financial market, particularly, herding behavior (Galariotis et al., 2015). Jose Manuel Barroso (the EU president) was also reported to have attributed the recent EU crisis not only to budgetary fundamentals but also to investors' behavioral biases (Galariotis et al., 2015). In addition, recent empirical evidence further suggests that the prevalence of investors' herding propensity remains perturbing, as the phenomenon appears persistent in both in both emerging (Huang, Wu, & Lin, 2016; Li et al., 2016; Yao et al., 2014) and developed markets (Blasco et al., 2017; Chang & Lin, 2015; Clements et al., 2017; Galariotis et al., 2016; Galariotis, et al., 2015; Litimi et al., 2016).

While this apprehension and concerns have further contributed to the growing realization that investors' herding practice requires policy attention, the situation, however, leaves some interesting questions unanswered. For example, what constitutes the effect of the recent financial regulatory changes, especially in the EU, on investors' behavioral anomalies? Does the new regulatory regime materially improve investors' information set? Or are there some possible negative consequences of these regulatory directives? Addressing these questions is important because experience has shown that promoting a well-functioning and stable financial market has been an elusive goal for many decades despite recurring regulatory efforts (Nenova, 2006).

The purpose of this study, therefore, is not to highlight why herding exists in the EU financial markets. Instead, to address the question of what actually constitutes the effect of recent financial regulatory changes on investors' herding practice in the EU equity markets. In doing so, this study focuses on two facets of these changes; the mandatory IFRS adoption and the changes in financial market regulatory infrastructure. A number of arguments and findings in the literature motivate this exploration. First, Leuz and Wysocki (2016) and Christensen et al. (2016) argue that the academic debate on the costs and benefits of these regulations is still ongoing and the empirical evidence is so far

mixed. Second, it is also observed that although investors appear to be the prime beneficiaries of these financial regulatory changes, much less is known about how these regulatory changes affect their trading behaviors (Beneish & Yohn, 2008; Chau et al., 2013).

A careful review of the extant literature indicates that the link between financial regulatory changes and investors' trading patterns requires further scrutiny (Armstrong, Barth, Jagolinzer, & Riedl, 2010; Hamberg, Mavruk, & Sjögren, 2013; Lo, 2013). So far, only a few studies attempt to explore this direct connection (e.g., Beneish, Miller, & Yohn, 2015; Beneish & Yohn, 2008; Chau et al., 2013; Mensah & Yang, 2008). However, the limited studies available are typically narrowed to specific market, e.g., developed over emerging markets (e.g. Kerl & Pauls, 2014; Voronkova & Bohl, 2005), or a sample around small size threshold (e.g. Chau et al., 2013; Lambertides & Mazouz, 2013), or a single country study (e.g. Lo, 2013; Mensah & Yang, 2008). Hence, the evidence documented so far is by no means generalizable. Third, with regards to herding behavior, the evidence is decidedly mixed and usually limited to the U.S. financial regulatory changes, notably Reg. F.D (e.g., Arya et al., 2005; Mensah & Yang, 2008). There is virtually lacking evidence on the impact of these regulatory initiatives on investors' herding practice in the EU financial market; except for positive feedback trading which is considered as an element of herding mentality documented in the IFRS literature (Chau et al., 2013; Lambertides & Mazouz, 2013).

For IFRS researchers, this may come as no surprise because recent literature has already pointed out that the documented IFRS adoption benefits are being exaggerated (Brüggemann et al., 2013; Christensen, Lee, Walker, & Zeng, 2015). As the substantive empirical evidence surrounding the capital market effects of IFRS adoption is yet to be settled (Cascino & Gassen, 2015; Horton, Serafeim, & Serafeim, 2013; Lopes & de Alencar, 2010; Palea, 2013). Moreover, the evidence documented in many instances is

not as strong as many assume (Lopes & de Alencar, 2010), and the conclusion is thus far from reach (Cascino & Gassen, 2012, 2015; Palea, 2013). These arguments buttress the position in Bryce, Ali, and Mather (2015), the caveat in Brüggemann et al. (2013), and the inference in Ahmed, Neel, and Wang (2013). Specifically, numerous questions surrounding the economic effects of IFRS adoption are still not resolved (García et al., 2017; Singleton-Green, 2015). One such question is the link between IFRS and investors' trading behavior (Beneish & Yohn, 2008; McEnroe & Sullivan, 2011; Shima & Gordon, 2011). Hamberg et al. (2013) contend that it is imperative and remains an unresolved issue whether the comparability benefit of IFRS disclosure helps to curb investors' trading bias. In a similar spirit, Armstrong et al. (2010) suggest the need to enrich our understanding of how investors in European markets perceive the quality of IFRS. Beneish and Yohn (2008) also suggest that one of the fruitful future research areas in the IFRS literature is the nexus between IFRS and investors' trading bias.

Therefore, since prior empirical research that specifically searched for the evidence of investors' herding practice around the recent financial regulatory changes is limited, this study attempts to fill this perceived void in the literature. By so doing, the study would deepen our current understanding of how the EU financial regulatory changes affect the information set of investors and by extension their trading behaviors. Particularly, those behaviors that tend to challenge the validity of EMH.

Consequently, while the EU's adoption of IFRS and reform of financial market regulatory infrastructure are undeniably appealing, Brüggemann et al. (2013) argue that harmonizing financial regulations in this jurisdiction represents a supranational move that attempts to unify diverse institutional and cultural factors. This, however, poses another concern as to whether one size fits all regulations are appropriate or even possible across all the EU member states. From the IFRS perspective, for example, Gray, Kang, Lin, and Tang (2015) argue that it will be excessively ambitious to assume that having a uniform

set of reporting benchmark would improve information environment, as accounting and reporting practices do not operate in a vacuum (Nurunnabi, 2015). There are diverse patterns of financial systems, and that the development of these financial systems tends to be a function of country-specific environmental factors (Cieslewicz, 2014; Daniel, Cieslewicz, & Pourjalali, 2012; Houqe, Monem, Tareq, & van Zijl, 2016). Among these factors, national economic culture is construed to have a significant influence on firms' reporting practices (Borker, 2012; Chand, Cummings, & Patel, 2012; Karaibrahimoglu & Cangarli, 2015; Ugrin, Mason, & Emley, 2017). Because the financial regulatory system is a product of its environment (Hector Perera, Cummings, & Chua, 2012) and each environment is unique to its cultural forces (Nurunnabi, 2015). Thus, diversity in cultural values is enough to affect the way and manner in which financial regulations are implemented (Brown & Tarca, 2005).

Nevertheless, despite the significant influence of national economic culture on corporates' reporting practices, the factor largely receives no explicit recognition (Borker, 2014); and that its effect around the IFRS adoption has not been fully appreciated (Cieslewicz, 2014; Karaibrahimoglu & Cangarli, 2016; Nurunnabi, 2015). In this regards, Ugrin et al. (2017) have therefore put forth a call for future researchers to test the impact of IFRS, globalism, and diversity, which may blur the cultural identity of multinational entities required to comply with IFRS. Cline & Williamson (2017) point out that national culture is an important informal institutional factor that is positively related to a healthy financial system. Because the factor influences the values and beliefs of a country's inhabitants, prescribes certain behaviors, and proscribes others (Ren & Gray, 2009). Therefore, in examining the effect of financial regulations on investor' trading behavior, it is vital to assess the influence of national economic culture (Chang & Lin, 2015; Deephouse, Newburry, & Soleimani, 2016). Consistent with this line of reasoning this

study attempts to highlight the role of national cultural values in examining the economic consequences of financial regulatory changes on investors' herding practice.

In doing so, the study seeks to answer the following questions:

1.4 Research Questions (RQ)

RQ 1. Does the mandatory IFRS adoption promote or inhibit investors' herding propensity in the EU equity market?

RQ 2. What is the impact of the EU reform of financial market regulatory infrastructure on investors' herding practice in the equity market?

RQ3. What is the role of national economic culture on the effect of financial regulatory changes on investors' herding practice in the equity market?

1.5 Research Objectives (RO)

The primary objective of this thesis is to investigate the impact of the new reporting and financial market regulatory directives and the moderating role of national economic culture on investors' herding practice. Specifically, this study aims:

RO1. To investigate whether the mandatory IFRS adoption promotes or inhibits the investors' herding propensity in the EU equity market.

RO2. To identify the impact of the changes in the EU financial market regulatory infrastructure on investors' herding practice in the EU equity market.

RO3. To analyze the role of national economic culture on the effect of financial regulatory changes on investors' herding practice in the equity market.

1.6 The significance of the Study

This study is part of the growing body of literature inspired by the EU financial regulatory directives designed to mitigate market anomalies, protect investors, enhance quality disclosure, and reduce financial market abuses.

1.6.1 Theoretical Contribution

This study builds on recent advances in comparative international accounting and finance literature and extends such literature by providing one of the early empirical evidence investigating the economic and informational consequences of EU financial regulatory directives on investors' herding practice. In doing so, the study contributes to the extant academic literature in a number of ways.

First, while much of the existing literature focuses on investigating the capital market effects of these regulatory changes from the perspective of firm's cost of capital (Ball, 2006; Daske et al., 2008; Kim et al., 2014; Persakis & Iatridis, 2016; Shi & Kim, 2007); analysts' forecast (Byard et al., 2011; Hodgdon et al., 2008; Tan, et al., 2011); value relevance (Capkun, Cazavan Jeny, Jeanjean, & Weiss, 2008; Gjerde, Knivsflå, & Sættem, 2008; Siekkinen, 2016), information asymmetry (Beneish & Yohn, 2008; Dumontier & Maghraoui, 2007; Wang & Welker, 2011), information acquisition costs (Ball, 2006), the present study differs as it focuses on the capital market effect from the perspective of investors' trading behavior.

Research addressing this issue is a dearth. Hence, this study is believed to be one of the limited numbers of studies that explicitly explore this direct connection. In this way, the study complements the efforts of Chau et al. (2013) who examine the effect of mandatory IFRS adoption and investors' noise trading behavior in three central and eastern European (CEE) markets, and Arya et al. (2005), who examine the effect of U.S Reg FD on analysts herding practice. In a similar spirit, the present study finds it worthy

to deepen our current understanding by revisiting the area with possible improvement in the methodology used, variables employed and their measurement, timeframe as well as the sample countries. Specifically, the study intends to determine whether changes in informational environments around two facets of the EU regulatory directives; the mandatory IFRS adoption and the reform of financial market regulatory infrastructure affect investors' trading behavior.

This exploration is deemed important given that the theoretical and empirical links between financial regulatory changes and investors behavioral patterns seem to be far from clear (Chau et al., 2013). To the researcher's knowledge, this study is amongst the earliest studies that attempt to test the joint effect of IFRS and changes in financial market regulatory infrastructure on investors' herding practice in the EU equity markets. This joint exploration is not only important but compelling because there is an established argument that the new regulatory changes are more or less bundled and therefore difficult to disentangle (Barth et al., 2013). If not appropriately examined, it would be difficult to separate with complete certainty which factor has which effect (Brüggemann et al., 2013; Christensen et al., 2013). Nevertheless, prior studies mostly investigate these factors in isolation. Therefore, in deviance to most earlier research, the present study tries to account, discretely the economic effect of IFRS as well as other EU financial market regulatory directives that took place virtually the same time. In this way, the study joins the ongoing academic debate on the costs and benefits of these regulatory directives.

Furthermore, the present study also attempts to address the need to highlight the influence of other environmental factors like national economic culture on the effect of financial regulatory changes. Literature has shown that financial regulation is but only one of the multitude of factors capable of improving market informational efficiency (Daske et al., 2013). Some country-specific factors are also as vital as the regulations themselves (Cieslewicz, 2014; Houqe et al. 2016; Nurunnabi, 2015; Qu & Leung, 2006;

Shima, Kim & Gordon, 2011; Shima, Kim & Yang, 2012). Of these, national economic culture is construed to have a significant influence on financial regulations (Chand et al., 2012; Cieslewicz, 2014; Nurunnabi, 2015).

However, despite the profound influence of national economic culture on financial regulation, the factor mostly receives no explicit recognition (Borker, 2014), its effect around the financial regulatory directives has not been sufficiently estimated (Hope, 2003; Karaibrahimoglu & Cangarli, 2016; Nurunnabi, 2015). Therefore, bringing culture into this study could improve the understanding of the relationships between financial regulatory changes and investors' herding tendency. Having a more nuanced understanding of the effect of herding around the new regulatory regime will help regulators and policymakers in the EU to become better equipped to handle business relationships in a setting with multicultural orientation.

1.6.2 Practical Contribution

The results of this study are expected to be of interest to academics, regulators, and policymakers in performing a cost-benefit analysis of financial regulatory changes, and to the investing public and other market participants who trade based on market fundamentals, treating them as the major indicators for future market movements. Furthermore, as the focus of this study is on the EU equity markets, the findings are expected to help the policymakers in that jurisdiction to gauge whether Regulation EC1606/2002 and other subsequent directives have realized their set objectives of improving reporting system and market informational environment efficiently. According to Palea (2013) and Christensen et al. (2016), the goal of such regulations is to ensure a higher level of information transparency and facilitation of more effective and cost-efficient functioning of the EU capital markets.

Furthermore, as the recent EU financial crisis has been attributed to investors' behavioral biases, particularly herding behavior (Singleton-Green, 2014; Szyszka 2010; Galariotis, et al., 2015; Galariotis, et al., 2015), the findings of this thesis are hoped to provide a useful insight to policymakers in that jurisdiction in taking a drastic measure to contain the adverse effect of this behavioral bias by providing them with the basis to use empirical accounting and finance research to arrive at defensible policy conclusion or to gauge the consequences of their earlier decisions. One of the main reasons why research in this area is essential is that Bikhchandani and Sharma (2000) argue that intentionally following the actions of others may lead to market fragility, excess volatility, and systemic risk. A better understanding of the nexus between financial regulations and herding tendency will, therefore, contribute to financial stability.

1.7 Organization of thesis

The remainder of the thesis is organized as follows:

Chapter Two: Literature Review: Investors' Herding Behavior in the Financial Market

The second chapter of this study reviews related literature governing the conduct of this study. The chapter is divided into three parts. The first part discusses the herding phenomenon in the financial market. The second part presents the empirical evidence of herding behavior in the financial market. The third part summarizes the chapter and briefly highlight why the effect of financial regulatory changes on investors' herding tendency is worthy of investigation. The financial regulatory changes considered in this study encompass (i) the EU mandatory IFRS adoption and (ii) the EU changes in financial market regulatory infrastructure.

Chapter Three: The Economic Effect of Financial Market Regulations and the Moderating Role of National Economic Culture

This chapter reviews the relevant literature regarding the economic effect of financial regulations. The chapter is split into three parts. The first part covers the review of the extant literature on economic and informational consequences of IFRS adoption. The second part covers the review of relevant literature on the economic effect of financial market regulation. The next part discusses the role of national economic culture on the economic effect of financial regulations.

Chapter Four: Theoretical Framework and Hypotheses Development

This chapter starts by discussing the theoretical overview guiding the conduct of this study. The chapter then presents a more detailed conceptualization of the research objectives. Hypothesized relationships between variables are also shown in line with the prior literature.

Chapter Five: Research Methodology and Design

This chapter discusses the methodology employed by the researcher to provide answers to the set research questions. The chapter also explains the research philosophy, epistemology, and ontology embraced by the researcher. The data used and the basis for sample selection are explained.

Chapter Six: Data Analysis and Discussion of the Research Findings

The chapter discusses the data analysis and interpretation of the empirical results based on the study's statistical findings.

Chapter Seven: Summary, Conclusion, and Recommendations

This is the final chapter in the series of chapters in this thesis. The chapter concludes the thesis with a summary of the overall findings and the summary of the study's

theoretical, practical and methodological contributions. Research limitations, areas of improvement, and recommendations for future studies are also discussed.

1.8 Chapter Summary

This chapter provides a general overview of the thesis and highlights the salient questions that motivate the conduct of this study. The issues raised in this chapter arise from the observed persistence of investors' behavioral anomalies in the financial market, particularly herding behavior. The herding activity is observed, particularly in European markets despite the series of regulatory initiatives designed to mitigate market anomalies, protect investors, and reduce financial market abuses. Therefore, this inexplicable situation raises an important question; what becomes the effect of the new financial regulatory changes? This, the researcher argues to be an important empirical question for which empirical answer is sought. Having identified the basic issues warranting further exploration, the chapter then continues by highlighting the set research questions, research objectives, and presents the study's contribution towards the literature. The last section of the chapter presents how the thesis is structured and what would be expected in the chapters that follow.

CHAPTER 2: LITERATURE REVIEW: INVESTORS' HERDING BEHAVIOR IN THE FINANCIAL MARKET

2.1 Introduction

This chapter reviews the extant theoretical and empirical literature regarding investors' herding propensity in the financial market. The remainder of the chapter is arranged as follows; Section 2.2 provides a conceptual overview of the herding phenomenon in the financial market. Section 2.3 discusses the empirical evidence of herding behavior in the financial market. This is followed by the summary of the chapter in section 3.4.

2.2 An Overview of Investors' Herding Behavior in the Financial Market

According to the efficient market hypothesis (EMH), assets prices reflect all available information at all times, and that investors interpret this information in an unequivocally rational way (Ananzeh, 2014; Fernández, Garcia-Merino, Mayoral, Santos, & Vallelado, 2011). Although this hypothesis is well established in the economic and finance literature, its reliability appears not be utterly compelling for some securities investors. For instance, in a situation where information environment is perceived to be opaque, or accounting standards are assumed to be weak, and or information acquisition is costly, some investors tend to believe that others are better informed and possess vital information that they lack (Bikhchandani & Sharma, 2000; Prosad et al., 2012). To cope with these informational uncertainties, they resort to "herding behavior" by simply disregarding their own market information signal and blindly mimic the action of victorious market investors (Dang & Lin, 2016; Duasa & Kassim, 2008; Litimi et al., 2016; Garg & Jindal, 2014; Golarzi & Ziyachi, 2013; Spyrou, 2013). Thus, making the rational finance approach to be subsumed by a new finance paradigm; behavioral finance.

Behavioral finance emerged as an alternative theory to help explain the apparent inconsistencies between the modern finance theory and real-world financial market behavior (Branch, 2014). What this new finance paradigm essentially suggests is that investors have to be seen as not sufficiently rational because they are subject to limitations and biases in both their perception and judgment (Hirshleifer, 2001). Thus, they may not process all relevant information as accurately as possible to make sound investment decisions. However, even if they do, they are likely to reach different conclusions, due to their heterogeneity in terms of capital resources, investment experience, and information processing (Belhoula & Naoui, 2011). Given these heterogeneous backgrounds, we, therefore, expect them to differ in their investment strategies. In other words, exhibit divergence in their trading patterns. Nonetheless, when herding exists, these investors instead show convergence in their trading patterns.

The debate that behavioral finance has gone into is one of the most significant discussions in economic history in the last five decades. The argument revolves around the issues of whether securities prices fully reflect all available information in the market and whether securities prices reflect the rationality or the irrationality of investors. Accordingly, the discussion also centered on the issue of whether investors and other market participants always (or at all) act based on market fundamentals when making financial decisions (Valsová, 2016). So far, the rationality side of the debate appears to be the leading one in both modern economics and modern finance, but it is increasingly evident that market participants are not always as rational and sophisticated as researchers would like to assume, which is evidenced by numerous anomalies that exist in the application of rational economic models. This is where behavioral finance comes in, attempting to explain the causes of these anomalies related to irrational behaviors and the means of mitigating them (Valsová, 2016).

Although behavioral finance paradigm is an emerging area (Musse & Echchabi, 2015), it has so far identified various irrational investment behaviors in the financial markets. Among these observed behavioral anomalies, herding activity is one of them (Chang & Lin, 2015). Academic interest in herding was particularly intense following several financial crises (Mobarek & Mollah, 2013). Research has shown that the effect of herding behavior was largely responsible for aggravating the recent EU financial crises and spill over volatility in countries that receive cross-border financial packages (Galariotis et al., 2015; Galariotis et al., 2016). However, despite being one of the most widely noticed investors' behavioral anomalies, Wang, (2008) argues that the phenomenon remains one of the least understood behavioral bias in the financial market lexicon. Thus, difficulties in testing its existence remain an obstacle in the extant literature.

Notwithstanding the inherent difficulties in studying investors' trading biases in the financial market, numerous empirical studies have attempted to examine investors' herding tendency, its geneses, effects, and measurements. These empirical studies are often classified into two broad categories (Messis & Zapranis, 2014; Yao, Ma, & He, 2014). The first category focuses on investigating the herding behavior of specific form of investors, such as financial analysts, mutual fund managers and so on (Chang, 2010; Kim & Nofsinger, 2005; Lakonishok et al., 1992; Sias, 2004). The other category focuses on testing the market wide herding using aggregate market data (Chang et al., 2000; Chiang & Zheng, 2010; Christie & Huang, 1995; Tan, Chiang, Mason, & Nelling, 2008) (Galariotis et al., 2015). The present study is however based on the latter approach and includes EU equity markets.

The following section reviews prior empirical literature regarding herding behavior with a view to highlighting the prevalence of the phenomenon in the financial markets.

2.3 Empirical Evidence of Herding Behavior in the Financial Market

Studies on the market-wide herding typically focus on cross-sectional correlated stocks return dispersion in response to changes in the market conditions. A study by Christie and Huang (1995) (hereafter CH) has often been considered as one of the pioneering studies of this category. CH argue that the overall market situations largely determine investors' decision-making process. During abnormal information flows or extreme market movement, individual investors tend to ignore their private information signal and search for market-wide consensus to modify their own beliefs regarding their private information. In consequence, individual returns tend to cluster around the overall market returns.

To test the presence of herding, CH proposed a model that uses cross-sectional standard deviation (CSSD) as a measure of average proximity of individual asset returns to the realized market average, using daily and monthly data set of US quoted firms from 1962 to 1988 and 1925 to 1988 respectively. Although the findings from the two set of data are not consistent with the existence of herding during the period of abnormal information flows, their model has been recognized and recommended as suitable for measuring investors' herding tendency. It uses stock price data relative to individual trading information which may be more difficult to obtain. However, Chang, Cheng & Khorana (2000) (hereafter CCK) contend that the linear relationship between return dispersion and market return as proposed by asset pricing model (e.g., CAMP), would no longer hold during extreme market movement. They explain that the possibility of investors to comfort to a market consensus during this period is sufficient to change the linear relationship into non-linear one.

To address this effect, CCK extend CH's herding measure to gauge investors' herding tendency in both developed and emerging financial markets. The measure uses cross-sectional absolute deviation (CSAD) to quantify the degree of return dispersions relative

to overall market returns. The empirical finding indicates that during market stress, security return dispersions appear to linearly increase for Hong Kong and the US, hence indicating no evidence of herd behavior. However, the partial evidence is recorded in the case of Japan, while for Taiwan and South Korea the two emerging markets the study reports a significant non-linear relationship, indicating a significant presence of herding behavior. Mobarek, Mollah, and Keasey (2014) investigate country-specific herding in European financial markets for the period of 2001-2012. While the results illustrate limited evidence of herding for the whole sample period, it, however, reports significant evidence of herding during the crisis and asymmetric market conditions. Klein (2013) examines time-variations in herding behavior in the US and Euro-area stock markets. The finding of the study also seems to lend credence to the claim that herding behavior is likely to be more pronounced during the period of abnormal information flows and extreme market movement. Specifically, the finding shows significant evidence of herding during crisis period like; the global financial crisis and after dot.com bubble.

However, Hwang and Salmon (2004) developed an alternative approach that uses a cross-sectional dispersion of factor sensitivity of assets as a proxy for herding behavior. The result indicates evidence of herding in both periods of market tranquillity and period of market stress, and thus contradicts the common beliefs that herding is more likely to prevail in a period when the market is in turbulence. Economou et al. (2011) examine investors' herding tendency in four international markets from 1998 to 2008, using daily stock returns of the chosen (Greek, Spanish, Italian and Portuguese) markets. The results reveal evidence of herding in Greek and Italian markets, whereas the effect is mixed in Portugal, and no herding is recorded in the Spanish market. Consistent with these findings, Simões Vieira and Valente Pereira (2015) also provide mixed evidence using two different herding measures in their analysis of stocks that form the Portuguese stock PSI-20 index. The authors argue that the mixed findings reported indicates that different

herding measure may result in different conclusion about the presence of herding behavior, and thus call for a more methodical rethink in future studies. In line with these findings, Riza Demirer, Kutan, and Chen (2010)) employ three different herding measures and reports similar results using daily stock returns of 689 Taiwanese firms quoted on the Taiwan Stock market.

Chiang and Zheng (2010) provide one of the comprehensive evidence of herding phenomenon from 18 different stock markets that cut across different continents, covering the periods between 1988 and 2009. The findings reveal that except for the U.S, there exists significant evidence of herding behavior in the developed market and Asia markets. However, no evidence is recorded in Latin American stock markets. Also, while, the phenomenon is found to be more pronounced in Asia during the upmarket, the authors argue that financial crisis intensified the herding phenomenon in the countries where the crisis originated and then produced spillover effects to the neighboring countries. During the crisis periods, the study finds strong evidence of herding in the US and Latin American markets.

Prosad et al. (2012) consider five years Nifty 50 Indian stock data between 2006 and 2011 to detect the market wide herding and then herding during bull and bear market separately. The result documents non-evidence of herding between 2006 and 2011 based on the market wide analysis. However, the separate test during bull and bear market indicates the prevalence of herding during the bull phase, but no evidence of herding during the bear phase. In their study, Messis and Zapranis (2014) use the cross-sectional variance of beta to test the existence of herding and its likely effects on market volatility on some selected stocks traded on the Athens Stock Exchange. The result reveals evidence of herding over the periods under consideration and also indicates that stocks exhibiting strong evidence of herding also tend to exhibit high evidence of volatility.

Belhoula and Naoui (2011) use a sample of 25 American quoted companies on the Dow Jones index and report evidence of herding activity by the investors.

Li et al. (2016) apply a trading volume-based measure, to test the level of herding practice between individual and institutional investors. The findings give four main insight. First, it is noticed that sophisticated investors (institutional investors) trade more selectively, while less sophisticated investors (individual investors) tend to trade evenly across all classes of stock. Second, less sophisticated investors tend to rely heavily on public information in making investment decisions as market sentiment usually influences them. Third, sophisticated investors respond asymmetrically to different market conditions, i.e., up and down market conditions, while less sophisticated investors do not. Lastly, despite, the observed differences in herding, both sophisticated and less sophisticated investors are found to pay close attention to one another's investment pattern in forming a consensus.

Galariotis et al. (2016) investigate the relationship between investors' herding tendency and stock market liquidity, an issue they claimed to have been ignored in the finance literature. The authors employ stock price data for the G5 markets from 2000 to 2015. The findings of this investigation initially reveal no evidence of herding based on the market-wide analysis. However, when the authors condition their estimate on the liquidity of stocks, they document significant evidence of herding for high liquidity stocks, in many of their sample markets. Interestingly, this finding does not hold for Germany, which demonstrates weaker evidence of herding in high liquidity stocks. In another study, Galariotis et al. (2015) find that investors in UK and US equity markets tend to herd when important macroeconomic information is released. In a similar development, Galariotis et al. (2015) also find that the release of macroeconomic information induced investors' herding during the EU crisis in the European bond markets.

Litimi et al. (2016) examine whether investors' herding propensity is a trigger for excessive volatility and increasing bubbles in the US equity market at a sectoral level. Their sample includes all the listed companies in the U.S. equity market over four major crises periods. The results reveal that herding is one of the vital ingredients for increasing bubbles in certain sectors, but not all. Kremer and Nautz (2013) also provide evidence on the reasons and effect of institutional investors' herding. Using a database of every transaction made by financial institutions in the German equity market, the study shows that institutions display herding tendency on a daily basis. Also, the intensity of the herding phenomenon is found to be contingent upon stock characteristics including its volatility and past returns. Moreover, while return reversals are found to have a destabilizing effect of herding on equity prices in the short term, the finding from panel regressions indicates that herding propensity is mainly unintentional and partly driven by the common market signal.

While several explanations have been put forth as to why investors' engage in herding practice, there appears to be a general unanimity that the behavior is irrational and tends to exacerbate market volatility, decay market stability, and impair the accurate functioning of securities markets (CCK). Many conjectures that the activities of this class of investors constitute a severe threat to the stability of financial market (Li, 2004), their presence has often been seen as the reason market decline often fuels further market decline and market increase fuels further market increases (Lakonishok et al., 1992); hence leading to excessive volatility in the markets (Bowe & Domuta, 2004), as well as economic bubbles and market crashes (Chang et al., 2000; Golarzi & Ziyachi, 2013).

The pervasiveness of this behavioral anomaly has led to an increasing clamor for more regulatory actions to limit investors' irrational behaviors and other market anomalies. In this regard, the international accounting standard setters and policymakers consider a global alignment of reporting standard and reform of securities market regulatory

infrastructure as some of the viable options to ensure corporate reporting transparency (Ball, 2006). Research has shown that stringent financial regulations and better reporting benchmark like IFRS, presupposes explicitly or implicitly that investors' behavioral anomalies like herding will be attenuated, information-based trading will be promoted, and market informational environment will be more efficient (Gelos & Wei, 2002; Chau et al., 2013; Lambertides and Mazouz, 2013). While there are numerous theoretical arguments as to why this might be the case, much depends on the specific assumption about the nature of information asymmetries (Gelos & Wei, 2002).

2.4 Chapter Summary and conclusion

This chapter discusses the theoretical arguments regarding in the financial markets. It also presents a review of prior empirical studies on investors' herding propensity. The discussions in the chapter show that the distortion effects that arise due to the propensity of the investors to trade in a contemporaneous manner by blindly mimicking the actions of others have been broadly reported in the literature. Furthermore, prior literature has also pointed out that costly information acquisition, lax regulatory infrastructure, and asymmetry of information tend to compel investors to neglect the fundamental value of an asset and follow the market consensus, which in turn poses a significant threat to the stability and efficiency of the market.

Against this backdrop, the present study argues that since financial regulations are some of the tools used to control the operations of the securities market, then one can establish a strong argument that the adoption of high-quality reporting standard like IFRS and reform of financial market regulatory infrastructure would mitigate this investors' irrational exuberance. This assumption is rooted in both theory and evidence. For example, prior evidence has shown that the enforcement of stringent financial regulations would enhance the firms' disclosure practices, help financial market achieve the desired level of information efficiency, and provide market participants with much need

information to make sound economic decisions. This is because if the financial market is informationally efficient in the sense that the price of an asset reflects all publicly available information, then asset prices will adjust up or down with no undershooting or overshooting in response to each investor's buy or sell decision. Thus, in an informationally efficient market, investors will buy or sell asset based on their market signal because they are facing conditionally correct prices, with the result that there is no herding. Nonetheless, there is a paucity of empirical evidence to buttress these assumptions. Thus, the purpose of this study is to fill this void in research by examining the economic effects of the EU financial regulatory changes on the level of investors' herding practice in the equity markets.

CHAPTER 3: LITERATURE REVIEW: THE ECONOMIC AND INFORMATIONAL CONSEQUENCES OF FINANCIAL REGULATIONS

This chapter reviews the extant literature regarding the economic and informational effect of two facets of EU financial regulatory changes, namely (i) the mandatory IFRS adoption and (ii) the reform of financial market regulatory infrastructure. Section 3.2 provides a review of the economic and informational effect of IFRS adoption and highlights the literature gaps therein. Section 3.4 discusses the relevant literature on the economic and informational effect of financial market regulations. Section 3.5 highlights the role of national economic culture on financial regulations. Section 3.6 summarizes the chapter.

3.1 IFRS and Investor Information Environment

Over the last one and half decades, acceptance and adoption of IFRS as a global reporting benchmark have continued to gain momentum (Houqe, Monem, & van Zijl, 2016). As of 2017, over 140 countries and reporting jurisdictions have required or permitted the use of IFRS for corporate reporting purposes (IFRS Foundation, 2017). This development is arguably one of the significant regulatory changes in the accounting history (Daske, Hail, Leuz, & Verdi, 2008; Hail, Leuz, & Wysocki, 2010) and a phenomenon that receives considerable attention from academics, regulators and market participants worldwide (Ding, Hope, Jeanjean, & Stolowy, 2007). Research on the effects of IFRS adoption is usually viewed in terms of its economic and informational consequences, a concept typically used to describe how the global reporting regulation affects financial reporting quality and capital market (Armstrong et al., 2010; Brüggemann et al., 2013; Chau et al., 2013; Lambertides & Mazouz, 2013).

In an attempt to provide insight into these economic consequences, this section reviews the literature on the economic effects of IFRS adoption from these two important

perspectives; financial reporting quality and capital market. These perspectives are expected to provide a clear understanding of how the new reporting regime is likely to influence investors' information set and by extension their trading patterns.

3.2 IFRS and Financial Reporting Quality

To understand how IFRS adoption affects investors' information environment, one needs to understand how the standard affects financial reporting quality. This is because accounting theory postulates that financial reporting quality brings a high level of information transparency (Soderstrom & Sun, 2007). This, in turn, improves investors' information set through reduction of information asymmetries and risk of adverse securities selection (Bushman, Piotroski, & Smith, 2011; Houqe, Easton, & van Zijl, 2014; Leuz & Wysocki, 2016; MartÍNez-Ferrero, 2014; Soderstrom & Sun, 2007).

Accounting scholars describe financial reporting quality as a term used about precision with which accounting information informs investors about firms' current operating performance and the future market movement (Callen, Khan, & Lu, 2013; Hribar, Kravet, & Wilson, 2014). Chen, Tang, Jiang, and Lin (2010) view financial reporting quality as "the extent to which financial information reflects firms' underlying economic reality." Another commonly cited definition of financial reporting quality is one given by Jonas and Blanchet (2000), who construe financial reporting quality as the one that provides complete and transparent financial information designed not to obscure or misinform the users.

However, literature has shown that financial information is only of quality if it has decision usefulness. To be useful, the information must satisfy two main qualitative characteristics; relevance and faithful representation (Krismiaji, Aryani, Aryani, Suhardjanto, & Suhardjanto, 2016). Financial information is said to be of relevance if it is capable of making a difference to a financial statement user's decisions (Palea, 2013).

Relevant information enables investors to correct or confirm prior expectations (feedback value), and allow them to forecast the future market movement (predictive value). Also, this information should be readily available to users before it loses steam to influence decisions (timeliness)(Obaidat, 2007).

Faithful representation, on the other hand, implies that the information should reflect the real-world economic phenomena that it purports to represent (Obaidat, 2007; Palea, 2013). The term faithful representation according to Neel (2017) is usually encapsulated by terms "reporting quality" and measured by a number of constructs, including, but not limited to, value relevance (Agostino, Drago, & Silipo, 2011; Barth et al., 2008; Barth, Landsman, Lang, & Williams, 2013; Clarkson, Hanna, Richardson, & Thompson, 2011; Devalle et al., 2010; Gong, Sophia, & Wang, 2016), accrual quality (Gassen & Sellhorn, 2006; Houqe, van Zijl, Dunstan, & Karim, 2012; Soderstrom & Sun, 2007), earnings management (Ahmed et al., 2013; Rudra & Bhattacharjee, 2012; Van Tendeloo & Vanstraelen, 2005; Zéghal, Chtourou, & Sellami, 2011), predictability (Gassen & Sellhorn, 2006; Van der Meulen, Gaeremynck, & Willekens, 2007), timeliness (Paananen, 2008; Zeghal, Chtourou, & Fourati, 2012).

As a uniform global reporting language, IFRS are designed to improve financial reporting quality and better the functioning of capital market, by enhancing the understandability and comparability of financial reports across international boundaries (Ball, 2006; Cascino & Gassen, 2012; Lee & Fargher, 2010; Neel, 2017; Platikanova & Perramon, 2012; Seay, 2014). The standards are meant to attain three-fold objectives. Firstly, to help in harmonizing the diverse reporting benchmark prevailing around the globe and remove the incomparability of financial statements within and across entities. Second, to facilitate the presentation of high quality, transparent and comparable information in financial statements. Third, to reduce to accounting alternatives, thereby eliminating the element of subjectivity in financial statements (Chakrabarty, 2011).

Bushman et al. (2011) argue that the use of a high quality-reporting regime like IFRS is expected to improve investment decisions by acting through two channels. On the one hand, by alleviating information asymmetries between firms and capital suppliers (Daske et al., 2008; Lambert et al., 2007; Leuz & Wysocki, 2008; Platikanova & Perramon, 2012). This would help attract investors, lower firms' cost of capital, and lessen firms 'underinvestment issues (Beneish et al., 2015). On the other hand, financial reporting quality would defeat managers' incentives to engage in value-destroying investment. This would be achieved since the board of directors will be furnished with more accurate and reliable information, this would increase them abilities to monitor managers' activities, including those relating to the investment decision (Ahmed & Duellman, 2007).

Being an enhancing qualitative characteristic of financial information, comparability benefit of IFRS allows users to evaluate financial information of a reporting entity and compare it with similar information about other entities and with similar information about the same entity (DeFond, Hu, Hung, & Li, 2011). Platikanova and Perramon (2012) claim that comparable information is of value if it allows users to identify similarities in and differences between two sets of economic phenomena. Hence, the introduction of IFRS is expected to remove informational externalities arising from lack of comparability. The comparability benefit would also reduce information acquisition costs and enables investors and other market participants to make informed economic decisions (Brochet, Jagolinzer, & Riedl, 2013).

All these arguments are premised upon at least two major assumptions. First, IFRS is assumed to be of superior quality compared to local reporting benchmark, and adopting the standards would lead to greater reporting quality. The second argument revolves around the fact that reporting standard is a complementary factor of the overall country's institutional factors (Anagnostopoulou, 2017; Ball, 2006; Barth & Israeli, 2013; Bova &

Pereira, 2012; Hope, 2003) and firm-specific factors (Daske et al., 2013; Francis, Khurana, & Pereira, 2005; Soderstrom & Sun, 2007).

However, empirical studies provide rather a mixed evidence for this conjecture, e.g. (Ahmed et al., 2013; Bodle et al., 2016; Cuijpers & Buijink, 2005; Dumontier & Maghraoui, 2007; Landsman, Maydew, & Thornock, 2012). More specifically, while Latridis (2010) documents an increase in reporting quality following the adoption of IFRS in the UK, Jeanjean and Stolowy (2008) find no supportive evidence for this conjecture. Their study uses a sample of 1,146 firm-year observations from three countries; Australia, France, and the UK. The authors find that the adoption of IFRS did not alter the prevalence of earning management in Australia and the UK, in fact, the phenomenon appears to have increased in France, hence conclude that the new reporting benchmark does not improve accounting quality. Moreover, they find that reporting incentives and institutional infrastructure seem to play an important if not a dominant role in shaping the reporting environment.

Conversely, Horton et al. (2013) report that the adoption of IFRS enhances reporting quality and increases the magnitude of forecast accuracy of the adopting firms relative to other companies. These findings also hold for voluntary adopters. Consistent with Jeanjean and Stolowy (2008), Doukakis (2014) study changes in reporting quality measured by accrual-based and real earnings management after mandatory IFRS adoption in 22 European countries. The findings illustrate that the effect of IFRS on either real or accrual-based earnings management practices is insignificant. However, firm-level reporting incentives not reporting standards is found to shape the reporting quality significantly. This finding is in line with the second argument that institutional factors and firms' specific factors are also as important as the standard. In a similar vein, Christensen et al. (2013) find that firm's reporting incentives played a substantial role in the observed discernible capital market benefits around the adoption of IFRS. Although

the authors acknowledged the contribution of IFRS, they argue that its effect is limited and unlikely to be the main driver of the observed results.

Furthermore, consistent with the second arguments above, La Porta et al. (1998) provide one of the early evidence of the legal system's effect on a country's overall financial system. The authors put forth the law and finance hypothesis, which posits that legal systems based on common law, which are rooted in the English law, performed better than legal systems based on civil law, which originated in French law, in promoting capital markets development. The reason being that the English law was developed in order to safeguard private property from the crown whereas the French law evolved to check the excesses of the judiciary, thereby enhancing the influences of the state. Given these evolutionary motives, the English law is more likely to protect investors better than the French law, which gave rise to the development of capital market in England more than in France and other civil law based countries. Accordingly, Agostino et al. (2011) argue that IFRS is developed in an environment where accounting and reporting practices are typically determined by the private sector and capital usually raised in regulated markets. Therefore, the emphasis on this new reporting benchmark is the information need of current and potential investors. By contrast, the civil law systems existing in most continental European countries enables investors to access private information with less reliance on the public information. Therefore, civil law systems are likely to have less stringent public disclosure benchmark and likely to generate less public information; and reporting standards tend to be inclined more to minimize taxes and earnings and to reduce share volatility than to deliver value-relevant information.

In this regard, Agostino et al. (2011) aver that the adoption of IFRS in civil law countries is likely to result in more value relevant information than in common law countries. Other factors linked to financial reporting quality include the country's capital market development (Ashiq Ali & Hwang, 2000), political system (Leuz & Oberholzer-

Gee, 2006), tax system (Haw, Hu, Hwang, & Wu, 2004), and capital structure (Sun, 2005). Soderstrom and Sun (2007) argue that controlling for these significant firm-specific and country-specific factors should be an essential task in the empirical research design.

Based on the preceding evidence, one can infer that the effect of IFRS on reporting quality is partially mixed and therefore difficult to conclude that the new reporting regime improves financial reporting quality. Specifically, at one end, the prior evidence seems to suggest that IFRS reporting benchmark enhances information quality, with some positive economic consequences of reducing earnings management, increasing value relevance, and timely loss recognition, among others. These findings are based on the premise that the new reporting regime offers high-quality information than the previous reporting regime. However, at the other end, the evidence seems not to provide supportive evidence for this conclusion. It is argued that the adoption of IFRS does not materially change the firms' reporting quality. In fact, the flexibility of the standard in terms judgments and estimates, as well as various incentives of the preparers from diverse institutional and cultural context make it relatively easier for managers to engage in opportunistic reporting practices. Also, it is suggested that other vital macroeconomic factors should be considered when examining the effect of IFRS. By and large, as a principle-based standard as opposed to rule-based, there is every basis to believe that IFRS reporting benchmark possesses some essential attributes of improving financial reporting quality, which would, of course, benefit investors in the decision-making process.

3.2.1 IFRS and Capital market

There is an intense academic debate surrounding the impact of IFRS adoption on capital markets (Daske et al., 2013; Christensen et al., 2013). Most research so far points to the direction of positive capital-market effects, contending that the new reporting regime would decrease cost of capital and increase market liquidity (Daske et al., 2008;

De George, Li, & Shivakumar, 2016; Kim, Shi, & Zhou, 2014), stimulate cross-border investment (Gordon & Porter, 2009; Naranjo, Saavedra, & Verdi, 2016) improve financial analysts' information environment (Byard et al., 2011), and mitigate investors' behavioural biases (Beneish et al., 2015; Beneish & Yohn, 2008; Chau et al., 2013).

Regulators and advocates of IFRS suggest that when information asymmetry is reduced, the capital market becomes better off and investors' trade rationally (Lambertides & Mazouz, 2013). Since the new reporting regime would foster financial reporting credibility and leads to market efficiency (Beneish et al., 2015). If rigorously applied IFRS would lead to a fundamental change in the business environment, therefore the rationale following this argument is that firms would evidently demonstrate an earnest attempt to comply with a variety of country-specific reporting standards even before the mandated IFRS adoption in 2005 (Soderstrom & Sun, 2007). Consistent with this notion, Houcine (2017) argue that the adoption of IFRS would facilitate efficient resource allocation, which in turn improves firms' investment efficiency. This is because one of the prime objectives of reporting standards is to facilitate economic decision, and a vital aspect of this is the facilitation of resource allocation (Ball, 2006; Chen, Hope, Li, & Wang, 2011; Leuz & Wysocki, 2016). A number of empirical studies substantiate this assumption by exhibiting that IFRS adoption reduces adverse securities selection in the capital markets (Lambert et al., 2007), and enhances investment efficiency (Naranjo et al., 2016; Schleicher, Tahoun, & Walker, 2010), which in turn lowers the cost of raising capital (Diamond & Verrecchia, 1991; Francis et al., 2005; Li, 2010; Lopes & de Alencar, 2010; Naranjo et al., 2016).

For example, Chang, Dasgupta, and Hilary (2009) use a model of dynamic adverse selection and illustrate that firms with better reporting benchmark tend to have more flexibility to issue capital. In this regard, Biddle, Hilary, and Verdi (2009) argue that if quality-reporting regime mitigates adverse selection costs, then the adoption of IFRS can

be linked to investment efficiency by way of reducing external financing costs and decreasing the risk that a firm acquires excess funds due to temporary mispricing. Relatedly, Biddle and Hilary (2006) find that firms with better reporting standards exhibit higher investment efficiency proxied by lower investment-cash flow sensitivity.

Covrig, Defond, and Hung (2007) illustrate that foreign mutual fund ownership is greater among companies that adopted IFRS and Bradshaw, Bushee, and Miller (2004) report that U.S. investment flow is higher in foreign firms whose reporting standard conform more closely to U.S. GAAP. If firms' investment flows is partly hindered by investors' inability to process, interpret, and compare financial statements of entities in other countries, Beneish et al. (2015) argue that the adoption of IFRS should reduce information processing costs and provide firms with an expanded investors base, leading to greater cross-border investments as well as firms' liquidity. This is because research has shown that difficulty in interpreting financial statements prepared using different reporting standards can act as a hindrance to foreign investment and that IFRS comparability benefit could address such impediment (Ball, 2006). Greater comparability could also decrease foreign investors' processing costs and potentially increase cross-border investments. Several other studies such as Easley & O'hara, (2004); García-Teruel, Martínez-Solano, and Sánchez-Ballesta (2009); Houqe, Monem, and van Zijl (2016); Persakis and Iatridis (2016, 2017) also agree that quality disclosure is a non-diversifiable risk factor, therefore, disparities in information among investors may affect firms investment flows.

International accounting literature has shown that information asymmetry, and the cost of capital reducing effects remain some of the essential capital market benefits of IFRS adoption. Theory suggests that higher quality and transparent financial reporting reduces the dispersion of information between (1) managers and outside investors and (2) prospective buyers and sellers of assets (Leuz & Verrecchia, 2000; Leuz & Wysocki,

2016; Platikanova & Perramon, 2012). To the extent that IFRS adoption is viewed as a viable source of reducing information asymmetry, the investment risk is expected to reduce and hence the costs of firms'financing (Wali & Boujelbene, 2017).

When compared with local reporting benchmark, IFRS is perceived to be of greater quality, which in turn would result in the lower cost of capital (Kim et al., 2014). Hong, Hung, and Lobo (2014) validate the above assertions when examining the effect of mandatory IFRS adoption on initial public offering underpricing for firms in 20 countries around the world. Evidence has further shown that enhanced disclosure and financial reporting comparability following IFRS adoption, coupled with institutional quality appear to have a combined influence on the cost of capital (Castillo-Merino, Menéndez-Plans, & Orgaz-Guerrero, 2014). Consistent with these assertions, Houqe, Monem, and van Zijl (2016) investigate the economic effect of IFRS adoption by Newzealand companies and find that the adoption of IFRS in New Zealand leads to a positive economic consequence of reducing the firms' cost of equity capital. Likewise, Persakis and Iatridis (2016) document a substantial improvement in the information environment and reduction in the cost of capital following the adoption of IFRS in the Eurozone and Asia countries.

Lowering the firms' cost of capital has been one of the underlying justification for introducing IFRS by IASB, and has been seen to be part of the motivation for the EU transition to IFRS. This should be expected, given that risk is a critical factor in investment decisions and the cost of capital represents a hurdle rate that a firm must overcome before it can generate value (Houqe, Monem, & van Zijl, 2016). Accounting literature has identified at least three reasons why quality disclosure is expected to benefit investors and reduce the cost of capital. First, the economic theory posits that quality disclosure mitigates information asymmetry by ensuring immediate dissemination of relevant information to all the market participants (Barth, Cahan, Chen, & Venter, 2016).

Second, it discloses valuable information to investors and facilitates their understanding of non-financial aspects of a firm, this, in turn, results in the broader investor base, improve risk sharing among investors, and subsequently lowers the cost of capital (Merton, 1987). Third, it decreases parameter uncertainty and valuation risk of expected returns, portions of which are non-diversifiable (Barry & Brown, 1985). Easley and O'hara (2004) argue that when information asymmetry is reduced, fundamental-based trading will be encouraged, and the cost of raising capital will significantly decrease. Conversely, Fox (1997) contend that increased disclosure might attract institutional investors that tend to trade in an aggressive manner and this may not be good for the market because it will aggravate stock price volatility around news announcements.

However, Bushee and Noe (2000) surmise that institutional investors might be sensitive to corporate disclosure practices for several reasons. First, they can be attracted to invest in firms with transparent disclosure practice if such disclosure has the potential to lessen the price effect of trades. This assertion has been buttressed in Diamond and Verrecchia (1991) who indicate that increased disclosure mitigates asymmetry of information that exists between the firm and investors, thereby reducing the price effect by lowering the cost capital and increasing the liquidity of firms' securities. Gompers and Metrick (1998) and Falkenstein (1996) also report lower price effect on institutional investors that tend to invest heavily in firms with higher average trading volumes.

Second, institutional investors can be enticed to firms if their disclosure practices are likely to determine and predict profitable trading opportunities. However, Bushee and Noe (2000) argue that these profit opportunities could be lost if disclosure that is more forthcoming offers an alternative private information collection. In their argument, Kim and Verrecchia (1994) show that the ability of investors to make profit is determined by their relative ability to process and interpret the implications of public signals, hence

suggesting that transparent disclosure could increase the ability of investors to process and analyze market signal accurately, which in turn leads to profit opportunities.

However, another line of literature is not without controversy. For instance, Cuijpers and Buijink (2005) document no supportive evidence on the cost of capital reducing effect when analyzing the voluntary application of IFRS in the EU. Clinch and Verrecchia (2015) show that increased disclosure from voluntary IFRS adoption may instead lead to an increase in the cost of capital because it is a voluntary choice not a commitment to transparency. Similarly, Daske (2006) fails to establish the lower cost of capital when examining a sample of German firms that voluntarily adopted IFRS before 2005.

Nevertheless, it is largely believed that IFRS is an informational change and its adoption would reduce information frictions faced by both domestic and foreign investors. Beneish and Yohn (2008) identify three types of information costs faced by investors that are likely to be reduced by IFRS adoption: (1) information processing costs, (2) uncertainty about the quality of financial reporting, and (3) uncertainty about the distribution of future cash flows. In this regard, Beneish et al. (2015) contend that if IFRS is successful at reducing some of these costs, we should expect to see an increase in cross-border investment. This is because the information costs associated with foreign investment typically result from investors facing uncertainty about the quality of foreign financial reporting.

The above argument has been empirically validated in Leuz and Wysocki (2008) who find that lack of transparent disclosure and lax governance mechanism tend to hamper foreign investment flow, thereby indicating that information barrier faced by foreign investors affects the flow of foreign investment into a country. Therefore, to this barrier has come a new reporting regime (IFRS) that brings a paradigm shift in many countries' reporting system (Gong et al., 2016; Lemus, 2016; Palea, 2013). The new reporting

regime provides investors with much-needed information and reduces their fear over information uncertainty, which in turn would result in greater foreign investment (Bushman et al., 2011; Lambert et al., 2007).

With regard to investors' uncertainty relating to the distribution of future cash flows; these information costs reflect the precision of both the financial and nonfinancial information for forecasting future cash flows. Evidence indicates that domestic geographical proximity and home investment bias where investors prefer to invest in companies that are geographically closer or companies in their home countries because they are likely to have more precise information as a result of greater access and more frequent interaction. To the extent that the uncertainty of the distribution of cash flows is associated with the precision of the financial information, IFRS adoption may decrease the information disadvantage faced by foreign relative to domestic investors and lead to greater foreign investment.

From the discussion thus far, one may be tempted to argue that the adoption of IFRS benefits capital market by mitigating information friction, boost investors' confidence to trade based on fundamental variables, treating them as major indicators for future market movement. However, it is still less clear whether these assumptions are empirically defensible. For example, Armstrong et al. (2010) argue that it is likely that investors would react negatively to toward the new reporting regime. This could be possible if investors tend to believe that IFRS may not adequately reflect regional differences in economies that led to disparities in reporting standards. In this regard, investors may tend to assume that this possible disparity in the application and enforcement of the standard could lead to an increase in opportunistic managerial discretion when using IFRS reporting requirements. Likewise, investors may tend to believe that the application and transition costs associated with IFRS will surpass any possible benefit. On the other hand, investors might see the movement towards IFRS as a commitment to transparency and

therefore, react positively. If, for example, investors believe that the adoption of a planetary set of reporting benchmark would have convergence benefits, such as reduction in information acquisition costs, lowering information asymmetry between the firm and investors and information risk and, thus, cost of capital.

To this end, to gain insight into investors' possible expectations regarding the IFRS adoption, this study tries to empirically explore whether the adoption of IFRS can promote information-based trading and mitigate irrational investment behaviors that are caused by informational uncertainties, such as herding.

3.3 The gap in the IFRS literature

From the preceding discussions, it is evident that an extensive line of literature abounds examining the economic and informational consequences of IFRS adoption. However, the growing findings in this extant literature seem to suggest that the new reporting regime has direct effects on the information environment of implementing countries (Barth et al., 2008; Daske et al., 2008; Houqe, Monem, & van Zijl, 2016). The espoused effect often cited include; reduction in the cost of capital (Ball, 2006; Shi & Kim, 2007b; Soderstrom & Sun, 2007), improvement in analysts' forecast (Donal Byard, Ying Li, & Yong Yu, 2011; Hodgdon, Tondkar, Harless, & Adhikari, 2008; Tan et al., 2011), increase in value relevance (Capkun et al., 2008; Gjerde et al., 2008; Tyrrall, Woodward, & Rakhimbekova, 2007), lowering information acquisition costs (Ray Ball, 2006) and mitigation of investors' behavioural bias (Beneish & Yohn, 2008; Chau et al., 2013). All these potential benefits rely on the assumption that the adoption of IFRS provides superior information to market participants and increased accounting comparability as compared to previous reporting regimes (Horton, Serafeim, & Serafeim, 2013).

Further, while prior theoretical and empirical literature seems to provide persuasive and repeated arguments on the potential benefits of IFRS, mostly to do with investors'

and capital market, the recent academic literature suggests that this inference is still premature (Brown, 2011; Cascino & Gassen, 2015; Palea, 2013). Because the substantive empirical evidence on economic and informational consequences of IFRS adoption is yet to be settled (Bryce, Ali, & Mather, 2015; Horton et al., 2013), and the conclusion is thus far from reach (Cascino & Gassen, 2015; Palea, 2013). An implicit assumption by IASB is that IFRS are objective, neutral and value-free, as it assumes financial statements would be transparent and comparable across firms and countries. However, several empirical studies provide clear evidence that this might not always be the case (Bryce et al., 2015; Horton et al., 2013). Some argue that, up till now, several questions surrounding the effect of IFRS still remain largely unexplored (García, Alejandro, Sáenz, & Sánchez, 2016), some receive relatively little attention (Ames, 2013; Kim et al., 2014), and many others still remain contentious (Kimeli, 2017). A general review of IFRS literature reveals that the economic and informational consequences of IFRS generally require further scrutiny (Brüggemann et al., 2013; Kimeli, 2017), Particularly, about how the new reporting regime affects investors' trading behaviors (Hellmann, 2016). This particular connection seems to be largely neglected. Chau et al., (2013) also contend that the theoretical and empirical link between IFRS and investors' trading behavior is still far from clear.

Although prior evidence has shown that investors tend to benefit from improved disclosure and transparency stemming from IFRS adoption, it remains an unresolved issue as to whether the comparability benefit of IFRS adoption changes investors' trading bias (Hamberg et al., 2013). One concern that often arises in connection to this, according to Hellmann (2016) is that some investors and other stakeholders may be misled into believing that there are more transparency, uniformity, and objectivity in practice than actually is the case. In this regard, Beneish and Yohn (2008) suggest as a fruitful future research area the nexus between IFRS and investors' trading patterns. It is suggested that

understanding how IFRS adoption affects the information set of investors and by extension, the trading strategies would provide a broader understanding of the claim that the new reporting regime is investor-oriented standard.

The advocates of this reporting benchmark often claim that the introduction of IFRS was partly motivated by the desire to improve reporting transparency and resolve investors' uncertainty regarding the quality of financial disclosure (Brüggemann et al., 2013; Platikanova & Perramon, 2012). This improved transparency would, therefore, increase the fraction of informed investors, reduce the level of irrational investment behavior and increase the speed at which new information is assimilated into prices (Chau et al., 2013; Lambertides & Mazouz, 2013). Whether this is the case still remain debatable.

3.4 Literature Summary

The following table summarizes some of the prominent literature on economic and informational consequences of IFRS adoption reviewed in this study.

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Table 3.1: Summary of Literature on Economic and informational Consequences of IFRS adoption

Author (s)	Sample Country	Outcome Variable (s)	Methodology/Model	IFRS Effects
Ahmed, K. et al. (2013b)	-	Value relevance, earnings transparency, analysts' earnings forecasts	Meta-Analysis	Mixed
Ahmed, A. S. et al. (2013a)	35 Countries around the world	Income smoothing, timely loss recognition, aggressive reporting of accruals	Secondary Analysis	Negative
Alexandre and Clavier (2017)	15 EU Countries	Bank liquidity constraints, credit rationing	Econometrics modeling	Marginal
Ali et al. (2016)	UK	Profitability of the UK's Alternative Investment Market	Econometrics modeling	Positive
Ames (2013)	South Africa	Earnings quality, value relevance	Econometric modeling, secondary data	Mixed
Armstrong et al. (2010)	18 European Countries	Stock Market reaction	Econometrics	Positive
Beneish, Messod D et al. (2015)	51 Countries around the world	Cross-border debt and equity investment	Secondary data analysis	Positive
Beneish, Messod D. and Yohn (2008)	-	Investors' equity home bias	Review	None
Brüggemann et al. (2013)	-	Comparability/transparency of financial statement	Review	Mixed
Byard et al., (2011)	Australia	Analysts' information environment	Dechow and Dichev models	Negative
Callao et al. (2007)	Spain	Comparability, value relevance of financial reporting	Econometrics modeling	
Capkun et al. (2016)	29 countries around the world	Income smoothing	Secondary data	Negative
Cascino and Gassen (2015)	Germany and Italy	Comparability of accounting information	Hand-collect data analysis	Marginal
Chau et al. (2013)	3 European countries	Investors' noise trading behavior	Econometrics	Positive

Table 3:1 Continued

Author (s)	Sample Country	Outcome Variable (s)	Methodology/Model	IFRS Effects
Hamberg et al. (2013)	Sweden	Equity home bias	Secondary data	Positive
Hodgdon et al. (2008)	13 Countries in Europe, Africa, and Asia	Analysts' forecast error	Econometric modeling and Secondary data analysis	Positive
Horton et al. (2013)	46 Countries around the world	Market information environment	Econometrics modeling	Positive
Houqe et al. (2014)	3 Western European countries	Information quality	Econometrics modeling	Positive
Houqe et al. (2016b)	New Zealand	Cost of capital	Econometrics modeling	Mixed
Karampinis and Hevas (2011)	Greece	Conditional conservatism, value relevance	Econometrics modeling	Marginal
Kim et al. (2014)	34 Countries around the world	Implied cost of capital	Econometrics modeling	Positive
Lambertides and Mazouz (2013)	20 European Countries	Stock price volatility, Informational efficiency	Econometrics	positive
Landsman et al. (2012)	27 Countries around the world	The information content of earning announcement	Path analysis	Positive
Lin et al. (2012)	Germany	Accounting quality	Secondary data analysis	Negative
Liu et al. (2011)	China	Earnings management, value relevance	Econometrics modeling	Positive
Mısırlıoğlu et al. (2013)	Turkey	Measurement change	Interview	Mixed
Olibe (2016)	UK	Equity Price and trading volume responses	Econometrics modeling	positive
Palea (2013)	-	Financial reporting quality	Review	Positive
Persakis and Iatridis (2017)	11 Eurozone and 8 Asian countries	Firms' cost of capital	Econometrics modeling	positive
Platikanova and Perramon (2012)	4 European Countries	Market liquidity	Secondary data analysis	positive
dos Santos et al. (2016)	145 Countries around the world	Firm's financing decision	The linear hierarchical regression model	Mixed
Soderstrom and Sun (2007)	-	Accounting information quality	Review	Mixed
Tan et al. (2011)	25 countries around the world	Analysts' following	Secondary data	positive
Turki et al. (2016)	France	Information asymmetry, cost of capital, analyst forecast	Econometric modeling	Positive

3.1 Financial Market Regulatory Infrastructure and Investor Information Environment

Academic literature establishes that effective securities regulation is vital to the development of the capital market (Jackson & Roe, 2009; La Porta, Lopez-de-Silanes, & Shleifer, 2006). However determining which regulation safeguards, the interest of investors has been both a topical issue in academic finance and an issue for policy-making at global development organizations (Jackson & Roe, 2009). There are different views regarding the implications of securities regulations on investors and capital market; whereas some advocate for rigorous securities regulations and supervision (Skott, 1995), others call for lax oversight (Gordy & Howells, 2006). By and large, regulatory processes are argued to be far from perfect and are often prone to several difficulties (Peltzman, Levine, & Noll, 1989). Notwithstanding, there have been several regulatory changes over time in different economies, and the need for such changes varies by country (Cumming et al., 2011; Kim et al., 2013).

The early empirical studies on the economic effects of financial market regulations mainly focus on U.S Securities Act of 1933 and the Exchange Act of 1934. The primary objective of these Acts is to strengthen disclosure practice and inhibit frauds in the sale of securities (Jarrell, 1981; Stigler, 1971). These enactments also ensure that the model of "private enforcement" by way of court proceedings is no longer the only option investors may pursue to protect themselves. It is argued that the model of "public enforcement" via regulatory authorities is likely to open new ways of protecting investors (Huang & Zhao, 2017). Surprisingly, some empirical studies conducted after the enactment of these Acts are typically skeptical to infer positive economic consequences, particularly to investors (Leuz & Wysocki, 2008). For example, Benston (1973) find that the Acts do not seem to have changed the way securities are being traded on the NYSE.

The presumed riskiness of financial assets, as measured by the variance of market prices net of covariance with the market, seems not to have been reduced, neither was the relative proportion of extreme price movements reduced. As such, the author concludes that the Acts had no measurable positive consequences. Consistent with these findings, Benston (1969) finds that there was no evidence of lack of disclosure before the enactment of the Acts, neither was there significant evidence of financial statements fraud. Hence, they contend that there was little or no justification for the new disclosure requirements as stipulated by the Acts. On the other hand, Eichengreen and Portes (1987) show that securities regulations and sound institutional arrangement help improve the efficiency of the financial markets by mitigating the moral hazard emanating from asymmetric information.

However, the subsequent empirical evidence seems to produce contrary arguments by suggesting that there exists a positive relationship between securities regulations and capital market (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000; La Porta et al., 2006; La Porta, Lopez-deSilanes, Shleifer, & Vishny, 1999). The postulation that securities regulations have a positive economic effect on the capital market and information environment gets some empirical support (Christensen, Hail, & Leuz, 2011; Cumming et al., 2011). Healy, Hutton, and Palepu (1999) investigate the changes in financial market variables related to increasing in analyst disclosure ratings for 97 firms from 38 industries. The results suggest that disclosure-rating leads to a decline in analyst forecast dispersion and lead to increases in stock liquidity, stock returns, and institutional ownership. Jain and Rezaee (2006) examine the capital market reaction to the Sarbanes-Oxley Act of 2002, which was designed to reinforce corporate professionalism and accountability to restore confidence in the mind of investors in corporate America. The results indicate that the new regulatory regime is indeed wealth increasing, in the sense that its potential benefits significantly override its imposed compliance costs. Barth,

Caprio, and Levine (2004) also find a positive relationship between private enforcement of securities law and better corporate monitoring in the banking industry.

The recent empirical evidence is, however, partially mixed (Arya et al., 2005; Christensen et al., 2011; Cumming et al., 2011; Leuz & Wysocki, 2016). For example. Hail and Leuz (2006) use a large sample of 40 countries to examine the effect of securities regulation and enforcement mechanisms on firms cost of capital, and find that countries with stringent securities laws and effective enforcement mechanisms tend to exhibit lower cost of capital than nations with lax legal institutions, even after controlling for various risk and country-level factors. Cumming et al. (2015) find that public enforcement of security regulations tends to assist small firms' security issuance, whereas private enforcement tends to benefits large firms more than the small firms. It is also found that once small firms access equity markets, private enforcement improves the amount of equity capital raised in domestic markets, while stronger public enforcement gives rise to larger firms raising capital internationally. This suggests that both public and private enforcement of securities regulations have different effects on firms' ability to raise capital.

Li et al. (2015) explore whether the recent adoption of Reg FD by the U.S. SEC has changed the quality and quantity of information in the credit markets and find that after the adoption of the new regulation, borrowing from new lenders upsurges loan spread. Also, (1) borrowers became more dependent on relationship lending; (2) lead lenders maintained a higher loan share; and (3) a typical loan syndicate involved a smaller number of participating lenders. They interpret these results as evidence of increased in the level of information asymmetry in credit markets around the new regulatory regime. In their study, La Porta et al. (2006) document mixed results when investigating the effect of securities regulations on financial market development in 49 countries. Based on answers to a detailed questionnaire disseminated to security-legal practitioners, the authors find

that several aspects of public enforcement of securities laws, such as criminal sanctions or having an independent regulator do not really matter on the development and efficiency of the financial market. However, they find that securities regulations that require extensive disclosure and accelerating private enforcement via investor recovery of losses tend to benefit investors.

Consistent with the focus of this study, prior research has also shown that financial market regulations influence the analysts and investors' information set, and by extension their trading behaviors. For example, For Ahmed and Schneible (2007) find that the implementation of regulation FD has reduced differences in the quality of information available to investors before quarterly earnings announcements. Moreover, it is likely to open new ways of protecting investors (Huang & Zhao, 2017). It is also observed that the new regulation tends to lessen an average information quality of investors in small and those in firms with high technology in the period before an earnings announcement. Gomes et al. (2007) find that the implementation of Reg FD in the U.S brings significant shift in analyst attention, leading to a welfare loss for small firms, which now experience a higher cost of capital. The study concludes that Reg FD might have an unintended economic effect and that the information set of investors might be more complex than the modern finance theory postulates.

On the contrary, Huang, Marsden, and Poskitt (2009) find a lower abnormal return around the annual earnings announcement date for small firms following securities law reform by the New Zealand Exchange. The authors conclude that the regulatory changes in New Zealand, as intended, have enhanced the flow of information to investors. Ke, Petroni, and Yu (2008) investigate the effect of Reg FD on the transient institutional investors trading pattern in the quarter before a bad news break in serial earnings increases. The findings illustrate that before the adoption of Reg. FD transient institutional investors used to have abnormal selling of equities in the quarter before a

bad news break. Even though this effect is limited to firms that hold conference calls before the adoption of the regulation. However, in the period following Reg FD, it is noticed that the transient investors show no similar abnormal selling of equity portfolios in the quarter before a bad news break. Additionally, after the adoption of the new regulation, transient institutions tend to allocate fewer of their equity portfolios to conference call entities relative to firms that do not hold a conference in the quarters before a bad news break. These findings suggest that Reg FD has impacted the tendency of management to engage in selective disclosure behavior, which in turn significantly altered the trading pattern of transient institutions investors.

Relatedly, Kross and Suk (2012) study how Regulation FD affected analysts' confidence in firms' public disclosure. The finding shows that Regulation FD provides an equal playing field for both the analysts and individual investors, thus promoting ''fair game'' property of the market. In a similar vein, Prokop and Kammann (2017) explore the effects of the EU's financial instruments directive (MiFID) on the level of confidence in financial analysts' earnings forecasts for Euro-zone firms. The exploration reveals that before the MiFID affiliated analysts, i.e., analysts with close business ties to the firms they follow – issued more optimistic longer-term earnings forecasts than their more independent peers. At the same time, their short-run forecasts were significantly less optimistic which is consistent with the notion of downward management of their earnings forecasts to avoid negative earnings surprises. Also, it is observed that since the adoption of MiFID, these differences in short-term and longer-term forecasts by affiliated and non-affiliated analysts have been eliminated, indicating that concerning affiliated financial analysts' earnings estimates, MiFID has been successful in mitigating conflicts of interest. In their study, Arya et al. (2005) find that Reg FD designed to reduce information asymmetry among the market participants, turn out to have unintended consequences of increasing herding behavior among analysts and leave investors worse off.

According to Di Giorgio and Di Noia (2001), a significant objective of financial market regulation is to ensure transparency and investor protection. The central idea is that when securities regulations are effective, they safeguard outside investors and creditors alike, which in turn would enhance firms' ability to raise capital and to exploit growth potentials (Hail & Leuz, 2006). Therefore, strong securities law leads to strong investor protection, which to a large degree lessens information asymmetry and the expropriation by insiders and brings less price protection on the part of outside investor (La Porta et al., 2000). La Porta et al. (2002) argue that firms domiciled in countries with better investor protection and sound legal systems are likely to benefit from higher equity valuations. In this regard, La Porta et al. (2000) suggest the use of the county's legal origin to assess the quality of financial regulation and by extension the level of investor protection. They argue that legal systems based on common law, which are rooted in the English law, tend to perform better than legal systems based on civil law, which originated in French law in protecting investors and promoting capital markets development. Therefore, even though financial regulations are designed to reduce market anomalies and promote market efficiency and stability, it is however argued that poor investor protection might impede achieving these objectives (Giofré, 2012).

The need to boost investors' confidence and to get their rights and interests protected has spurred regulators around the world to embark on corporate governance reform (Bris & Cabolis, 2008). Consistent with these ideas, recent research asserts that an essential feature of good corporate governance is strong investor protection, where investor protection is defined as the extent of the laws that protect investors' rights and the strength of the legal institutions that facilitate the law (Defond & Hung, 2004). 2000a). Strong investor protection regulation prevents managers from opportunistic and inefficient behavior and thereby increases investors' willingness to participate in the financial markets (La Porta et al., 2006; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002).

Klapper and Love (2004) find that effective corporate governance law is greatly associated with better operating performance and market valuation, especially in countries with lax legal environments.

In classical law literature, better legal protection of investors is connected with better capital markets and rational trading behavior (Bris & Cabolis, 2008; Brown, Martinsson, & Petersen, 2013). Because investor protection is an essential element in the development of capital markets (Larrain, Tapia, & Urzúa, 2014). Markets with better investor protection tend to allow investors to efficiently allocation their resources to firms with better investment prospects (Solaiman, 2009), and invest more in R&D and innovation (Brown et al., 2013). Zhang, Wang, and Jiang (2017) argue that investor protection law helps in averting assets prices from crashing because it inhibits insiders from stockpiling bad news and hiding the fraud. This would allow outside investors to act promptly to save their investment. Consistent with this argument, Benmelech, Kandel, and Veronesi (2010) illustrate that in a dynamic rational expectations model with asymmetric information; stock-based compensation encourages managers to mask bad news about future growth options. This often leads to a severe overvaluation and a consequent crash in the asset price. Thus, stringent regulations governing publicly traded entities protect investors' rights because firms must disclose transparent information and produce quality financial reports to reduce the asymmetry of information between insiders and outsiders. According to Hutton, Marcus, and Tehranian (2009) firms with opaque financial reports have a higher risk of a crash. While firms with better financial regulations are less prone to investors irrational behavior that usually leads market crashes. Consistent with this argument, a number of scholars (Gelos & Wei, 2002; Guney, Kallinterakis, & Komba, 2017; Prosad, Kapoor, & Sengupta, 2012) also show that lack of corporate transparency, less publicly available information, lax regulatory infrastructure, and weak accounting standards are said to be the leading cause towards investors' loss of confidence and

increase the tendency of investors' behavioral anomalies like herding and noise trading, which ultimately posed to undermine the stability of the financial markets.

In view of the emphasis given to quality disclosure, it is said that financial market regulations are essential to mitigating irrational investment behavior and market anomalies (Baxt et al., 2003). This is because such laws more often than not rest on the principle of equality, honesty, and integrity of the market participants as well as the adequate provision of information to make informed investment decisions (Solaiman, 2009). However, whether these assertions remain a useful working assumption is still not explicit. The question as to whether the improvement in information environment emanating from changes in financial market regulations make investors feel fully secured to trade on market signals is still not apparent. This is because recent evidence suggests that despite series of efforts to restore investors' confidence and mitigate financial market abuses via securities law reforms, particularly in the U.S. and EU jurisdiction, it is argued that investors behavioral biases, particularly herding behavior remain pervasive (Galariotis et al., 2016; Galariotis, et al., 2015). Many participants in the financial market are still skeptical and seem to lack the confidence to trade based on fundamental variables., thinking that others are better informed and possess vital information that they lack (Dang & Lin, 2016; Duasa & Kassim, 2008; Litimi et al., 2016; Garg & Jindal, 2014; Golarzi & Ziyachi, 2013; Spyrou, 2013). To cope with these uncertainties, they usually resort to "herding behavior" by simply disregarding their own market information signal and blindly mimic the action of victorious market investors (Dang & Lin, 2016; Duasa & Kassim, 2008; Litimi et al., 2016; Garg & Jindal, 2014; Golarzi & Ziyachi, 2013; Spyrou, 2013). The study of Arya et al. (2005) empirically corroborates this argument.

3.1.1 The Gap in the Financial Market Regulatory Literature

The recent trends in the financial market have spurred the debate about the presumed quality of financial reporting and other market regulations around the world (Leuz &

Wysocki, 2016). Several financial crises such as; the Asian financial crisis, the Enron debacle in the U.S, global economic turmoil, and the Eurozone crisis, have led to numerous regulatory reforms, increased scrutiny, and enactment of new regulations and enforcement (Cumming et al., 2015; Leuz & Wysocki, 2016; Hector Perera et al., 2012).

However, recent evidence has shown that the academic debate on the costs and benefits of these new regulatory regimes is still controversial, and the empirical evidence is so far mixed (Christensen et al., 2016; Cumming et al., 2011; Cumming et al., 2015). Furthermore, it is also less clear whether the new regulations are likely to mitigate market anomalies, particularly investors' and analysts' irrational exuberance (Arya et al., 2005). For instance, the recent academic literature is particularly concern regarding the prevalence of investors herding practice, as the phenomenon remains persistent (Chang and Lin, 2015; Galariotis et al., 2016) in both emerging (Demirer et al., 2010; Demirer, Kutan, & Zhang, 2014; Huang et al., 2016; Javaira & Hassan, 2015) and developed markets (Blasco et al., 2017; Chang and Lin, 2015). Thus, the question that remains unanswered is what actually constitutes the effect of recent financial regulatory changes on investors' trading behavior, particularly herding behavior. It is against this backdrop; this study tries to address this question by examining whether the new financial regulations promote or inhibit the intensity of investors' herding practice in the EU equity market.

However, in examining the effect of financial regulatory on investors trading behavior, this study tries to understand how these regulatory changes interface with the economic environment. According to the institutional theory, the actions of an entity are only legitimate if these actions are proper, desirable, or appropriate within some socially constructed system of beliefs, norms, values, and definitions (Biesenthal, Clegg, Mahalingam, & Sankaran, 2018). Therefore, for any new regulation to be successful, it must operate in accordance with society's beliefs, norms, and values (culture).

3.2 The Role of National Economic Culture on Financial Regulations

The role of national economic culture in understanding human behaviour in social systems has been explored across a wide range of literature, including, accounting, financial regulation, and corporate governance (e.g. Chang and Lin, 2015; Cieslewicz, 2014; Daniel, Cieslewicz, and Pourjalali, 2012; Hauff & Richter, 2015; Lodorfos & Boateng, 2006; Perera, 1994; Hector Perera et al., 2012; Cummings, and Chua, 2012; Perera, 1989; Qu & Leung, 2006); Cline & Williamson, 2017). About IFRS disclosure, for example, the direction of the relationships is mixed (Clements, Neill, & Stovall, 2010; Houqe, Monem, Tareq, et al., 2016; Karaibrahimoglu and Cangarli, 2016; Nurunnabi, 2015; Tsakumis, 2007).

Although there is no universally accepted definition of culture, it is mostly agreed to consist of a standard set of value systems, attitudes, beliefs, knowledge and behavioral norms by a given society (Gray, 1988; Mayfield & Mayfield, 2012). Hofstede and Bond (1988) see culture as a collective mental programming of the human mind, which assists in explaining the similarities and differences of the human societies. To help explain these value system, Hofstede and Bond (1984) develop a model with five societal values that might be used to describe the extent of convergence and divergence of human society: (i) uncertainty avoidance (2) power distance (iii) individualism (iv) masculinity and (v) long-term orientation. Gray (1988) argues that if these underlying cultural dimensions exist, then a connection between societal values and accounting system can be established and the influence of culture can be estimated. Gray suggests that the Hofstede and Bond (1988) cultural dimensions can be permeated to accounting sub-culture and thus be related to accounting value in any given society as follows:

i. Professionalism versus Statutory Control: the extent to which there is a preference for the exercise of individual professional judgment as opposed to compliance with the prescriptive regulation.

ii. Uniformity versus Flexibility: the extent to which there is a preference for uniform accounting systems compared to flexibility to suit individual company circumstances.

iii. Conservatism versus Optimism: the extent to which there is a preference for a pessimistic as opposed to an optimistic approach to accounting measurement.

iv. Secrecy versus Transparency: the extent to which there is a preference for information being restricted to insiders only compared to transparency, openness and public accountability.

Given the influence of national economic culture on accounting and other regulatory infrastructure, Abd-Elsalam and Weetman (2003) study the relative familiarity and language influence during the IFRS adoption process, and find that countries with Anglo-American culture tend to be more inclined to adopt IFRS due to predominant Anglo-American influence in the development of IFRS and that English is the language largely use within the IASB. In a similar vein, Zeghal and Mhedhbi (2006) also confirm this assertion by reporting that countries that belong to an Anglo-American culture tend to be more interested in adopting IFRS than those with Non-Anglo-American culture. Gray et al. (2015) argue that it would be excessively ambitious to assume that having a uniform set of reporting regime like IFRS would lead to information quality if we consider the heterogeneous nature of institutional and cultural characteristics across countries. Thus, differences in cultural orientations across nations may affect the adoption and application of financial regulations in different ways (Borker, 2014; Wehrfritz & Haller, 2014).

For example, Ugrin et al. (2017) find that national culture has a significant influence in determining the direction of the relationship between income-increasing earnings management and financial reporting changes in European firms. The study finds an increase in earnings management among European companies following the IFRS adoption. This effect is mainly seen among firms in countries that are high power distant,

individualistic, uncertainty avoidant, indulgent, and short-term orientation. Furthermore, Houqe, Monem, Tareq, et al. (2016) also find that earning quality improves following financial regulatory changes in countries with a higher level of cultural secrecy. Chui, Titman, and Wei (2010) use Hofstede individualism index to study the association between individualism and profitability of momentum strategy a cross-countries. The evidence indicates that the momentum effect is found to be significantly higher in countries with the high individualism score. This result holds even after controlling for other macroeconomic factors that are likely to affect the efficiency of capital markets.

Garcia-Sanchez, Cuadrado-Ballesteros, and Frias-Aceituno (2016) analyze how institutional factors affect the relevance and comparability of corporate social responsibility reporting and find that strong institutional environment enhances the quality of economic, social and environmental disclosure, particularly, for firms located in coercive societies described by higher cultural values of long-term orientation, uncertainty avoidance, lower power distance. As Nobes (2006) observed country-specific variables, particularly, the financial system, legal system, accounting regulation, and the national economic culture have a significant influence on accountants and may lead to different judgments being made even though the same set of regulations is applied. This is because cultural practices are norms displayed by most people within a culture as observed by members of that culture (Stephan & Uhlaner, 2010), therefore, accountants from different countries may have diverse expectations about firms' decisions because of their different cultural orientation, which may result in divergent personal values, norms, and practices (Carroll, 1979). This is confirmed in Dahawy, Merino, and Conover (2002) who find that socio-economic factors have a significant impact on the implementation of reporting regulation in Egypt and that the tendency towards cultural secrecy that is embedded in Egyptian culture tends to influence the adoption of the new reporting regulation.

Conversely, Zarzeski (1996) find that the impact of cultural values on international accounting disclosure is minimal. Adding that, cultural values may not be so relevant for cross-border financial reporting like IFRS, unless combined with other market forces. Similarly, Jaggi and Low (2000) find that cultural factor has no significant effects on financial disclosure for firms from countries of common law legal origin, while the evidence on firms from code law legal system provides rather mixed results. Karaibrahimoglu and Cangarli (2016) investigate the moderating role of a cultural factor on the association between auditing and reporting standards and firms' ethical behavior. The authors find that the relationship between auditing and reporting standards on firms' ethical behavior increases when a society is characterized by high in-group collectivism, uncertainty avoidance, future orientation, and lower power distance. In Bangladesh, Nurunnabi (2015) find that the enforcement of IFRS is weak due to a high level of corruption, which weakens the country's enforcement mechanism marked by secretive cultural value. Wickramasinghe and Hopper (2005) also highlight how germane political and economic culture is to financial regulatory change in a developing country such as Sri Lanka.

Daniel et al. (2012) study the variations of cultural and institutional factors and their impact on CG practices. The findings show that GC regulations are best informed by appreciating the cultural and institutional factors. Li and Harrison (2008) demonstrate that national economic cultures of the home countries of MNCs have strong influences on their governance structures and should, therefore, be considered in cross-country research. Ho, Wang, and Vitell (2012) and Ringov and Zollo (2007) explore the link between national culture and CSR practice. Their research postulated a negative relationship between culture and CSR, but the empirical findings suggest a positive relationship. Consistently, Peng, Dashdeleg, and Chih (2014) report that four of Hofstede cultural dimensions significantly influence corporate social responsibility reporting, with

uncertainty avoidance and individualism indicating a positive influence on while masculinity and power distance have a negative impact on CSR. Similarly, Orji (2010) document a negative association between cultural values of power distance, uncertainty avoidance, and masculinity, when examining the link between culture and corporate social disclosure practices. Meek, Roberts, and Gray (1995) consider the factors are influencing voluntarily corporate social reporting in U.S., UK, and continental Europe MNCs and find that national and regional influences such as cultural differences are significant.

History has shown that economic consideration is not the only factor in influencing regulations, cultural and political factors are likewise crucial, and culture is proving to be a key mitigating factor against convergence of new rules and principles (Ntongho, 2016). This is because values are part of the substance of culture; they shape attitudes and practices and are indispensable in the design of societies' laws and regulations (Salacuse, 2003). Individualism and collectivism, for example, is construed to be one of the significant cultural value affecting the social view of the objective of an establishment (Ntongho, 2016). Not surprising, regulatory authorities and the policymakers usually draw on these cultural values to create regulations that reflect their societal values (Schwartz, 1999). Hence, the reason each society or country tends to have different rules and regulations (Gray & Vint, 1995; Hofstede & Bond, 1984; Salter & Niswander, 1995). Therefore, the desire to preserve these diverse cultural orientations across societies/countries is likely to impede the application of one-size fits all regulatory changes. In this regard, Arshad Ali, Akbar, and Ormrod (2016) point out that it is vital for policymakers and regulatory authorities to consider the fundamental elements of culture when introducing a new regulatory regime. Against this backdrop, it would make an intuitive sense to assume that the differences in societal value systems are likely to affect the acceptance and application of new regulations. As noted by Houqe et al., (2016),

it is highly likely that the resultant economic and informational effect of the recent financial regulatory changes will also be diverse across all these countries due to different cultural orientation.

While country economic culture is perceived to be linked to financial regulatory changes, it is contended that the factor often receives no specific recognition (Ho & Wong, 2001). Ho and Wong (2001) argue that 'the role of culture in firms' disclosure has yet to be thoroughly evaluated. Because, it is usually presumed to be part of a broader institutional factor (Daniel et al., 2012). Thus, the importance of national economic factor in the development of national and international regulations has not been adequately assessed. Hence the motivation for exploring the influence of national culture in this study.

3.3 Literature summary

The following table summarizes the literature on the role of macroeconomic/Institutional factors on financial regulations.

Table 3.2: Summary of Literature on the Role of Macroeconomic/Institutional Factors on Financial Regulations

Author (s)	Sample	Macroeconomic variable examined	Methodology	Findings
Albu et al. (2011)	Romania	Institutional factors	Interview and secondary data analysis	Low conformity with IFRS due to coercive institutional factor
Amiram (2012)	105 countries around the world	Language, legal origin, culture, corruption, investor protection	Secondary data analysis	The increased in foreign equity following IFRS adoption is driven by low level of corruption and better investor protection.
Ball et al. (2000)	7 countries around the world	Legal origin, taxation, litigation	Secondary data analysis, Econometrics modeling	Legal origin, taxation and litigation influence the properties of accounting earnings.
Barth and Israeli (2013)	35 countries around the world	Regulatory quality	Secondary analysis	IFRS adoption leads to liquidity benefits, but these benefits rely on the strength of enforcement mechanisms.
Borker (2014)	Egypt, Iran and Iraq	Cultural Orientation	Secondary analysis	Positive relationship between cultural orientation and IFRS implementation.
Cieslewicz (2014)	49 Countries around the world	Institutional variables, economic culture	Secondary analysis	National institutional and cultural factors have positively influenced IFRS implementation.
Clements et al. (2010)	61 Countries around the world	National Cultural	Secondary analysis	There is a negative relationship between national culture and IFRS adoption.
Gray et al. (2015)	14 EU Countries	National Culture	Secondary data analysis	Earnings management continues after IFRS adoption, and that national cultural factor remains influential in explaining the extent of the phenomenon across countries.
Houqe and Monem (2016)	104 Countries around the world	Political Institution and perceived corruption	Secondary data analysis	IFRS implementation lowers the level of perceived corruption in developing countries.

Table 3:2 Continued

Author (s)	Sample	Macroeconomic variable examined	Methodology	Effects on IFRS adoption
Houqe et al. (2016a)	16 European countries	Financial secrecy	Secondary data analysis	The effect of IFRS on earning quality is higher in a country with a higher level of secrecy.
Isidro and Raonic (2012)	26 Countries	Institutional factors	Econometrics modeling	Country's institutional factors positively influence reporting quality.
Chen, J. J. and Cheng (2007)	China	Corporate governance mechanism	Secondary data analysis,	Corporate governance mechanism has no significant influence on the Chinese transition to IFRS.
Judge et al. (2010)	Greece and US	Isomorphic Pressures- Coercive, Normative And Mimetic	Secondary data analysis	Institutional pressure-coercive, normative and mimetic tend to influence the adoption of IFRS.
Karaibrahimoglu and Cangarli (2016)	54 Countries around the world	Hofstede cultural dimension	Secondary data analysis	National cultural variables influence the financial reporting and auditing standards on firms' ethical behavior.
Nurunnabi (2015)	Bangladesh	Politico-institutional factor	Interview	IFRS adoption is influenced by three national institutional factors of coercive, normative and mimetic pressures.
Shima and Yang (2012)	73 countries around the world	The legal system, political and economic tie, taxation, size of the capital market, inflation	Secondary data analysis	The legal system, political and economic tie incentivize the adoption of IFRS. However, taxation, capital market size and inflation are found to be negatively related to IFRS adoption
Christensen et al. (2013)	35 countries around the world	Regulatory quality	elf-constructed surveys/secondary data analysis	Changes in enforcement mechanism play significant, if not dominant, a role for the observed liquidity benefits after mandatory IFRS adoption.

3.4 Chapter Summary

This chapter presents a review of prior empirical studies on the economic and informational consequences of financial regulations. The chapter also reviews past literature, which highlights how the country's institutional factors influence the effect of financial regulatory changes. From the review presented in this chapter, some significant points are noted. First, it is observed that the academic debate on the costs and benefits of these regulations is still ongoing, and the empirical evidence is so far mixed. Second, although investors appear to be the prime beneficiaries of these financial regulatory changes, much less is known about how these regulatory changes affect their trading behaviors. A careful review of the extant literature indicates that the link between financial regulatory changes and investors' trading patterns generally requires further scrutiny. So far, only a few studies attempt to explore this direct connection.

Consequently, while the EU's adoption of IFRS and reform of financial market regulatory infrastructure are said to be a welcome development, it is argued that harmonizing reporting regulation in that jurisdiction represents a supranational move that attempts to unify various institutional and cultural factors. This, however, poses a concern as to whether one size fits all financial regulation is appropriate or even possible across all the EU member states. In this regard, it is argued that it will be excessively ambitious to assume that having a uniform set of reporting benchmark would improve information environment, as accounting and reporting practices do not operate in a vacuum. There are diverse patterns of the financial system, and that the development of these financial systems tends to be a function of environmental factors. Among these factors, national economic culture is construed to have a significant influence on firms' reporting practices. Since accounting and reporting system is a product of its environment, and each environment is unique to its cultural forces. Thus, diversity in cultural values is enough

to affect the way and manner in which financial regulations are implemented. Nonetheless, despite the significant influence of national economic culture on corporates' reporting practices, the factor largely receives no explicit recognition its effect around IFRS adoption has not been fully appreciated.

CHAPTER 4: THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

4.1 Introduction

With the aim of extending and contributing to the extant literature on financial reporting and market regulations, the primary objective of this study is to investigate the effect of EU IFRS adoption and changes in financial market regulatory infrastructure on investors herding practice, and how the national economic culture moderates these effects.

Signaling theory, market efficiency theory, and institutional theory are three relevant theories that underpin the study's framework, which is shown in Figure 4.1 (below). The rest of the chapter is organized as follows; Section 4.2 presents the theoretical overview. Section 4.3 present research framework of the study. This is followed by the development of research hypotheses in section 4.4. Section 4.5 provides a summary and conclusion for the chapter.

4.2 Theoretical overview

Building on previous literature this study uses signaling theory and market efficiency theory to guide the investigation of the impact of financial market regulations on investors' herding behavior. These theories are used given their growing importance in accounting and finance research, coupled with their seemingly competing attributes due to the similarities in the phenomena they address. Both theories attempt to address the problems of information asymmetry in the markets. Also, to facilitate the understanding of how financial regulation interfaces with its environment; this study adopts institutional theory to guide the evaluation of the role of national economic culture being an informal institutional factor.

4.3 Signaling theory

The signaling theory emerged from the study of information economics under conditions in which buyers and sellers possess asymmetric information when facing a market interaction (Spence, 1974). The theory describes how two parties (individuals or organizations) have access to different information (Shehata, 2014). Spence founded this theory in 1973 and argued that information asymmetries exist among market participants, and such asymmetries result in investors misunderstanding the economic and operating reality within an entity (Masoud, 2017). This according to the founder may create an unfair trading advantage for one category of participant in the financial markets. Although the theory was developed in the labor market, signaling is a general phenomenon applicable in any market with information asymmetry (Morris, 1987).

To simplify the underlying assumptions of signaling theory, Kirmani and Rao (2000) cited in Connelly et al. (2011) provide an example that helps explain a basic signaling model. The authors consider signaling and non-signaling payoff to distinguish between two firms; high and low-quality firms. Even though the two firms in this illustration very well know their actual quality, outsiders such as investors do not, hence information asymmetry is present (Connelly et al., 2011). Therefore, each of these firms has the opportunity to send a signal or decide not to send a signal as regards to their actual quality to outsiders. It, however, assumed that when high-quality firms send out signal, they receive Payoff A, and when they do not send a signal they receive Payoff B. On the contrary, low-quality firms receive Payoff C when sending out signal and Payoff D when they do not.

Thus, signaling signifies a workable strategy for high-quality firms when A > B and when D > C. Given these conditions, the gains of high-quality firms from sending out signal weigh the gains from any other approach, thereby encouraging them to send out signal. However, for the low-quality firm, a non-signaling approach offers a greater

payoff than signaling, i.e., D > C, hence leading to a separating equilibrium. In such situations, outsiders will be able to disentangle between high and low-quality firms correctly. Conversely, when both firms gain from signaling (i.e., A > B and C > D), a pooling equilibrium occurs (the study of Cadsby et al. (1990), provides an interesting insight regarding pooling and separating equilibria in financial market) and outsiders will not be able to differentiate between high and low-quality firms.

Furthermore, Taj (2016) argues that signals are informational signs sent out by one party to another in order to influence desired outcomes. Typically, after obtaining private information, insiders may decide whether or not to pass this information to the outsiders. However, when signals are sent out intentionally, it suggests an attempt to reduce the intensity of information asymmetry, which would help firms attain their ultimate objectives of positively influencing desired outcomes (Connelly, Certo, Ireland, & Reutzel, 2011; Mavlanova, Benbunan-Fich, & Koufaris, 2012). Thus, it is one of the significant functions of signaling theory to ensure that such asymmetries of information are reduced to the barest minimum, and that valid signal is communicated (Spence, 2002; Taj, 2016). These assumptions are particularly relevant to the present study that investigates the effect of signaling of information arising from financial regulatory changes on investors herding practice.

However, numerous studies (e.g., Deephouse, 2000; Ryan et al., 2000; Sanders & Boivie, 2004) have integrated signaling concepts with other related theories in order to understand information asymmetry. In the field of corporate governance, signaling theory has been applied to show how CEOs signaled their firms' unobservable quality to potential investors through the observable quality of their financial statements (Zhang & Wiersema, 2009). In the entrepreneurship literature, signaling theory has been applied to show the signaling value of board characteristics (Arthurs, Busenitz, Hoskisson, & Johnson, 2009; Certo, 2003; Certo, Daily, & Dalton, 2001). The theory has also been used

by wide-range of scholars to explain how corporations make use of different boards to communicate adhesion to social values to diverse organizational stakeholders (Miller & del Carmen Triana, 2009). Therefore, in an effort to contribute to the growing body of literature, this study applies signaling theory in the context of financial regulations to examine how the recent adoption of IFRS and changes in financial market regulatory infrastructure transmit an informational signal to investors.

Tarca (2004) shows that introduction of stringent reporting regulations can serve as a signal by which firms demonstrate their commitment to communicating more transparent, more comparable and high-quality financial disclosure to both sophisticated and non-sophisticated investors. Conversely, Al-Razeen and Karbhari (2004) argue that even in the presence of stringent financial regulation, full disclosure is not always attainable, because corporate reporting regulation is intended to provide outside investors with the minimum quantity of information needed to make economic decisions. Consistently, Daske et al. (2008) and Healy and Palepu (1993) argue that even when disclosure regulations like IFRS are mandatorily required, the flexibility of the regulation regarding managers' discretion might cause managers to behave opportunistically.

Notwithstanding these arguments, evidence on the economic consequences of financial regulatory changes suggests that these changes are introduced, in the public interest, to protect investors, enhancing quality disclosure, and reduce information asymmetry (Christensen et al., 2011; Cumming et al., 2011; Hope et al., 2006; Jensen & Meckling, 1976, 1979; Lambert et al., 2006). Thus, mitigating information asymmetry is essential for developing a strong signaling environment with information flowing efficiently between the firm and its stakeholders. Based on this premise, this study applies the signaling theory to explain how the flows of signals arising from changes in financial regulations are likely to affect investors' herding practice.

4.4 Efficient market theory

Another important theory used in this study is an efficient market theory. The origin of this theory can be traced back to 1970 and Fama's efficient market hypothesis (EMH) (Fu, 2006). The theory is still being considered a founding theory in modern financial economics (Kristoufek & Vosvrda, 2018). The assumption behind EMH is that market is perfectly efficient and that all investors are better informed and make rational investment decisions based on firms' fundamentals variables (Jovanovic, Andreadakis, & Schinckus, 2016; Smith, 2008). Therefore, whatever information about securities' price is available to one investor is also available to all other investors (Ball, 2009). This fundamental assumption is built on the basis that when information arises, the news blows out very quickly and is assimilated into the prices of securities immediately. Thus, neither technical analysis, which is the study of past stock prices in an attempt to predict future prices, nor even fundamental analysis, which is the analysis of financial information such as company earnings and asset values to help investors select "undervalued" stocks, would enable an investor to achieve returns higher than those that could be obtained (Malkiel, 2003). In other word, market prices adjust to new information immediately and, as a result, no arbitrage opportunities exist that would allow investors to achieve above-average returns without accepting the above-average risk (Majumder, 2013).

In his original paper, Fama (1970) summarizes the empirical validations of the theoretical papers of Fama (1965) and Samuelson Samuelson (1965). The theory was revisited and made more explicit in Fama (1991). In Fama (1970), the paper put forward three different degrees of efficiencies in the financial market: strong, semi-strong and weak form of EMH. According to him, the strong form of efficiency posits that all information (public and private) including insider information instantly reflects firms' current security price. Hence, no one insider or outsider can claim a superior information benefit. The second version of the hypothesis; semi-strong efficiency claims that all

public information is instantly factored into firms' security prices, thereby making fundamental analyses, including firm individual, industry and economic analyses impossible to be used to gain a superior information advantage. While the weak form of efficiency states that all historical prices are reflected in the current security prices. Therefore, technical analyses cannot provide the investor with superior information advantage (Fu, 2006).

Validating the above assumptions of EMH has been a challenging mission for researchers. It can be argued that for every single empirical paper supporting the market efficiency, one can perhaps find a different paper which empirically establishes market inefficiency (Majumder, 2013). For example, Chan, Gup, and Pan (1997), Rubinstein (2001), Malkiel (2003, 2005) and many others provided empirical evidence in support of EMH. Equally, one can provide references of studies by Fama and French (1988), Poterba and Summers (1988), Lo and MacKinlay (1988), Cutler, Poterba, and Summers (1989), and Jegadeesh (1990) whose findings are indicative of market inefficiency. However, even though the validity of EMH has been dared on many fronts, the theory remains one of the strong theoretical basis in the financial economics theory (Majumder, 2013).

Building on the market efficiency theory Malkiel (2002) argues that enhancing the firms' disclosure quality via stringent financial regulations may well help a securities' market achieve the desired level of information efficiency and provide the investors with much-needed information for making sound investment decisions. This assertion has been buttressed by Beaver (1973) who argues that one of the key implications of market efficiency for financial regulations is to provide more transparent disclosure. However, there seems to be a growing concern whether EMH can keep abreast of the fast evolving development of securities market due to the pervasiveness of the current market anomalies (Morunga & Bradbury, 2012).

To the extent that quality and transparent disclosure promote market efficiency, this study argues that a market where IFRS is adopted and financial market regulatory mechanism strengthened should reflect an environment where EMH would be expected to hold. Challenging EMH in this type of market would then cast strong doubts over the theory behind the hypothesis. Thus, this study tests the financial regulatory implications of EMH.

4.5 Institutional theory

Institutions have been defined by institutional theorists to mean rules of a social game in which individuals and their organizations are the players (North 1992; Rowe & Wehrmeyer, 2001). These rules include formal; such as laws, regulations, and standards, and informal; such as traditions, norms, customs, taboos, and the codes of conduct. Therefore, members in organizations are expected to act in line with these set of rules in order for them to survive or win in a society (North 1992). Reletedly, Scott (2001) views the institutional environment as the relatively enduring systems of societal beliefs and socially organized practices associated with different functional areas of social systems. Hence, the emphasis on how actions become rule-like or become social facts makes institutional theory suitable for understanding how organizational endeavors are legitimized.

Some instutionalist are of the view that institutional theory is a continuation and extension of the academic revolution that started in the 1960s, in an attempt to pay more attention to the importance of symbolic aspects of organizations, such as social and cultural aspects, as well as their environments. The theory takes its lead from an open systems view that organizations' environment impacts organizations' decision and that this environment is, partly, a social construction that is historically sedimented (Clegg, 1981; Glover, Champion, Daniels, & Dainty, 2014). It is patently obvious that institutional theory provides the lens through which scholars can gain insight and explain

the significant organizational effects that are interconnected with changes in cultural and social forces (Carvalho, da Cunha, Lima, & Carstens, 2017). However, one feature that distinguishes the institutional theory from other organizational environment theories is the emphasis given to cultural elements, such as symbols, cognitive systems, normative beliefs, and the source of such elements (Gomes, Carnegie, & Lima Rodrigues, 2008).

Prior conceptualizations of institutions and their influence attempted to describe how institutional forces triggered conformity of behavior in social settings. This is because institutions are assumed to possess certain vital elements, such as normative, regulative, and cultural-cognitive (Carvalho et al., 2017; Ostrom, 2005). In this regard, Scott (2013) argues that since institutions comprise these essential elements (normative, regulative, and cultural-cognitive), coupled with related activities and resources that offer stability and meaning to social life, then these elements and activities can be theorized as institutional pillars. The normative pillar according to Scott (2013) tries to explain the prescriptive and obligatory dimensions of the institutions; regulative pillar highlights explicit rules as well as monitoring and supervision activities; while the cultural pillar relies on shared values, beliefs, norms, and are usually dependent on individual thought.

Thus, as social settings become enshrined and institutionalized, organizations are prompted by legitimacy concerns to comply and integrate these practices (Comyns, 2017). Legitimacy in this sense refers to the adoption of viable practices considered as being appropriate by relevant stakeholders (DiMaggio & Powell, 2000). For this reason, institutional theory shows that the actions of an entity are only legitimate, proper, desirable, or appropriate if they are in sync with a socially constructed system of beliefs, norms, values, and definitions (Tilling, 2004). Based on the same rationale, Hoque (2006) argues that organizational legitimacy can be considered as a valuable resource on which many organizations relies upon for their survival (Hoque, 2006). The quest for survival

and legitimacy is argued to be a fundamental theme in institutional development (Glover et al., 2014).

However, there appears to be a dominant interest in institutional theory when it comes to explaining how changes in regulatory practices, social values, and technological innovations affect organizational practices (Glover et al., 2014). In recent time, for example, this theoretical approach has been extensively used in a wide range of research contexts. In entrepreneurship, Kshetri (2017) applies institutional theory to explain how investors react to a new source of entrepreneurial financing. Yawar and Kauppi (2018) used institutional theory to explain the adoption of socially responsible supplier development practice in India. Accordingly, Glover et al. (2014) show that institutional theory is suitable for exploring the adoption of legitimate and sustainable practice across the dairy chain.

Furthermore, drawing on institutional theory, Delmas and Toffel (2004) find how organizational strategies lead to the implementation of environmental management practices. Ball and Craig, (2010) find that normative institutional pillar energies firms to be more environmentally mindful, and argue that institutional theory is relevant in understanding new social laws and how the organization reacts to environmental issues. Institutional researchers from the accounting perspective suggest that the interests and actions of those external to any given organization may also be critically important in understanding accounting practices (Gomes et al., 2008). From the preceding discussion, it is evident that research and theory on institutional analysis have spawned valuable insights into how institutional quality might condition the impact of new regulations on the organization and implementation capacity of regulators.

Until recently, different perspectives of the institutional theory have been used to explain regulations. These perspectives have led to a surge of literature that suggests the

implications of regulatory intervention in the economy. For example, those approaches that take into account the views of neoclassical economics tend to emphasis on the demand side of regulation (Nickerson & Phillips, 2003; Parker, 2002). Thus considering institutions as they are and neglect the effect of institutional components on regulation. While the supply side of regulation is viewed as a black box in the literature prior to institutional economics. In order to open the black box, a new perspective emerged "institutional economics theory" which tries to incorporate institutions into the analysis of regulation (Hodgson, 1998; Melody, 2016; Parker, 2002; Peltzman et al., 1989; Spiller & Tommasi, 2008). The new perspective in contrast to many earlier perspectives does not attempt to replace or upturn neo-classical view; rather it builds on, modifies, and extends the neoclassical theory to allow it to come to grips and deal with a whole range of issues hitherto beyond its grasp (North, 1991).

The new institutional economics emphasizes rules and norms and accepts diversity in disciplines and methodologies (North, 1991). The new approach agrees on much of the views of standard neoclassical approach to the institution, albeit with significant exceptions that give the approach its revolutionary character (Ménard & Shirley, 2014; North, 1991). Therefore, following North (1991)'s institutional, economic perspective, this study adopts institutional theory to explain the role of a country's cultural, institutional pillar on the effect of the EU's financial regulatory changes on investors' herding practice.

This perspective is deemed suitable because it helps in explaining not only the relationship among the institutions responsible for designing any given regulation but also emphasizes "the rules of the game" which entails both economic and cultural interactions. The interaction of these two significant factors, on the one hand, determines, to a large extent, transaction costs, regulatory commitment, and hence the quality of regulation. Consistently, Daniel et al. (2012) opine that just like laws of the natural environment that

define whether or not crops will grow, the efficacy of institutional environment determines the efficacy of regulation within a country. Thus, to understand the quality of a country's regulation, one needs to understand the quality of her institutions. However, these institutions are argued to be influenced by the national economic culture. Hence, understanding the country's institutional environment requires the proper understanding of her economic culture.

4.6 Research Framework

The research framework of this study is depicted in figure 4.1 below.

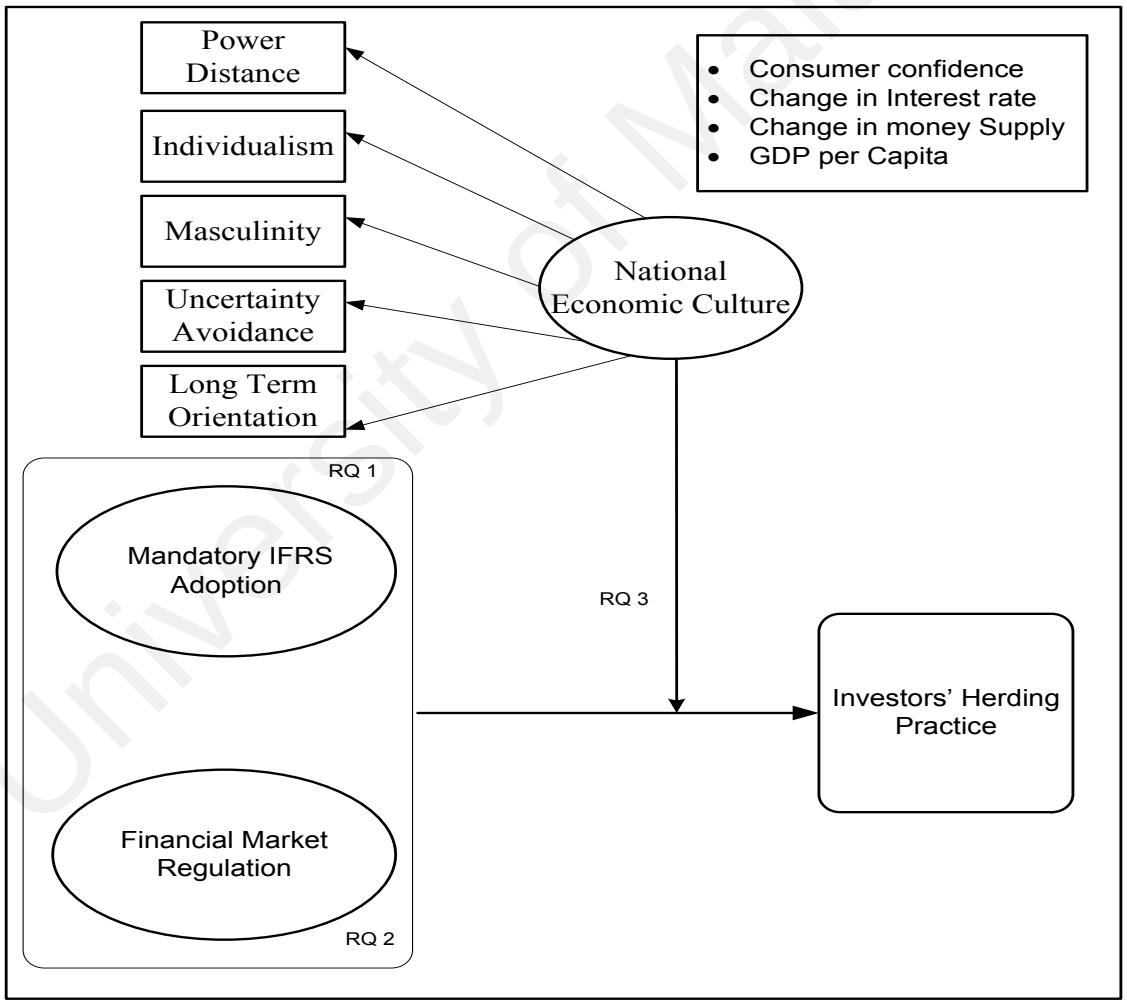

Figure 4. 1: Theoretical framework of the study

In line with the relevant factors identified in prior chapters, the thesis's research design involves employing two independent variables: IFRS adoption and reform of financial

market regulatory infrastructure, and one moderating variable: national economic culture. The construct IFRS adoption was identified through the IFRS literature and is measured by a dummy variable taking the value of one for the Post-adoption period and zero otherwise. The financial market regulatory infrastructure is the second independent variable identified in the financial market literature and measured by World Governance Indicators (WGI) developed by Kaufmann et al. (2009). The reason for using Kaufmann et al. (2009) regulatory and governance indices is in view of the fact that introducing a new regulation is one thing and enforcing them is entirely another. Thus, the use of WGI would allow us to gauge both the effectiveness of the new EU regulations as well as their enforcement. Moreover, the rationale for studying IFRS adoption and financial market regulatory changes jointly in this study is to address a recent growing concern that two regulatory changes are more or less bundled in the EU and therefore difficult to disentangle. If not appropriately examined, it would be difficult to separate with complete certainty which factor has which effect. For the construct of national economic culture, this study employs the Hofstede's (1980, 2001) five cultural dimensions to test the influence of this informal institutional factor on the effect of financial regulatory changes.

4.7 Hypothesis Development

In this section, the hypotheses regarding the causal relationships between the employed independent variables and the dependent variables are predicted. This refers to the effect of mandatory IFRS adoption and reform of financial market regulatory infrastructure on investors herding practice while highlighting the role of national economic culture. Signaling, efficient market theory, and institutional theory guide the development of these hypotheses.

4.7.1 IFRS Adoption and Investor Information Environment (RQ1)

The empirical evidence establishes that investors are more likely to exhibit irrational behavior in a market with less publicly available information (Javaira & Hassan, 2015;

Yao et al., 2014; Zhou & Lai, 2009). This argument has been documented in a number of theoretical and empirical literature over the last few decades. In times of market turbulence, this argument gains weight (Antoniou, Koutmos, & Pericli, 2005; Galariotis et al., 2015; Galariotis et al., 2016). The popular argument revolves around calls for more regulatory action to lessen the effects of investor herding and noise trading behaviors, on the premise that these actions destabilize prices (Hou et al., 2013; Zhou & Lai, 2009).

Given that, financial reporting regulation is one of the mechanisms used to control the operation of security markets (Palea, 2013); the adoption of high quality and transparent reporting regimes like IFRS might come in handy. This is because evidence has shown that the primary objectives of mandating the use of IFRS include; improvement in disclosure quality and the reduction of information asymmetry, which in turn would increase the proportion of sophisticated investors from both domestic and international markets. Intuitively, increased participation of informed investors in the market should encourage information-based trading and reduce irrational investment behavior like herding and noise trading. Nevertheless, whether these assumptions are justifiable is still not clear, and the empirical evidence addressing this connection is so far limited.

Thus, understanding the link between this new reporting benchmark and investors trading patterns is vital in and of itself (Hellmann, 2016). This is because when compared with local reporting standards, IFRS is claimed to be investor-oriented standards, the adoption of which presupposes that behavioral anomalies of investors would be attenuated, information-based trading would be promoted, and market informational environment would, therefore, be more efficient (Chau et al., 2013; Florou & Pope, 2009; Lambertides & Mazouz, 2013). These arguments are supported in both theory and evidence. For instance, signaling theory suggests that information asymmetry that exists between investors will be reduced if the new information signal is transmitted. According to the theory, mitigating information asymmetry requires developing a strong signaling

environment with information flowing efficiently between the firm and its stakeholders. Thus, given this theoretical postulation, it would make an intuitive sense to assume that high-quality reporting requirements emanating from mandatory IFRS adoption would transmit a positive signal to investors of the firm's intention to more transparent information (Tarca, 2004).

Moreover, recent academic literature also corroborates these arguments. The hypothesis that quality disclosure may have an impact on investors' trading behavior has been supported in the extant literature. For instance, Leuz and Wysocki (2016) argue that improvement in information quality tends to incentivize desirable investment behaviors and discourage undesirable ones. This is because when investors' behavioral anomalies are by nature informational, the quality of corporate disclosure matters. High-quality reporting regimes like IFRS are expected to mitigate the asymmetries of information ex-ante and enable better control ex-post, thereby reducing the effect of market imperfections (Alexandre & Clavier, 2017). To the extent that IFRS allows more comprehensive corporate disclosure, informational transparency is expected to improve. This improved transparency according to Chau et al. (2013) and Lambertides, and Mazouz (2013) should reduce the intensity of investors' destabilizing behaviors like herding and noise trading. Consistent with this line of reasoning this study hypothesizes that:

H1: There is a positive relationship between mandatory IFRS adoption and investors' herding practice in the equity market.

4.7.2 Financial market Regulations and investors information environment (RQ2)

The efficient market theory posits that assets prices reflect all available information at all times and investors interpret this information in an unequivocally rational way (Ananzeh, 2014; Fernández et al., 2011). It is widely acknowledged that achieving

informational efficiency is a function of effective securities market regulations (La Porta et al., 1998, 2006; Jackson and Roe, 2009). Drawing on efficient market theory, Lambert, Hübner, Michel, and Olivier (2006) assert that stringent financial regulations would ensure immediate absorption of all relevant information in assets prices. Including that contained in the history of past prices (Weak form EMH), that in publicly available information (semi-strong form EMH), and that contained in insider information (strong form EMH).

Prior literature has attempted to identify potential market anomalies that tend to defy EMH and warrant the prevalence of financial market regulations around the world. Di Giorgio and Di Noia (2001) note that financial market regulation is designed to correct market imperfections, ensure transparency and to protect investors. However, Leftwich (1980) and Watts and Zimmerman (1983) argue that concerns other than market imperfections usually enthuse financial regulation, but for instance, may be due to the concern about the welfare of less sophisticated investors. Hence, regulators create minimum disclosure requirements that will lessen the information gap between sophisticated and less sophisticated.

Generally, the role of financial regulations is to create an efficient and competitive market (Goshen & Parchomovsky, 2005), increase market liquidity, (Christensen et al., 2016), protect the interest of investors (La Porta et al., 2006), enhance quality disclosure (Healy & Palepu, 2001) avert systemic crises, and generally reduce financial market abuses (Cumming et al., 2011; Cumming et al., 2015; Fagan, 2002). Goshen and Parchomovsky (2005) argue that these roles can be summarized into three broad categories: mitigation of insider trading, deterrence of fraud and manipulation, and disclosure duties. Each of these categories helps the activities of market participants in a distinct way. The mitigation of insider trading, for example, is aimed at reducing information asymmetry that exists between inside and outside investors and level the

playing field among all the market participants. Prevention of fraud and manipulation category tries to lower the investors' cost of verifying the credibility of information and improves their ability to make accurate predictions. Disclosure duties reduce their information gathering costs (Goshen & Parchomovsky, 2005). Thus, the aggregate effect of financial regulation is to curb market anomalies and create a secure, efficient and competitive market for all.

However, as with many other regulations, the academic debate on the costs and benefits of these regulations is still controversial, and the evidence so far is decidedly mixed (Christensen et al., 2016). Thus, whether or not financial regulation is beneficial to the capital market appears to be largely an empirical matter. This is because scholars have argued that the efficacy of regulations is contingent on how the regulations are implemented and enforced (e.g., Djankov et al. 2003). In this way, Cieslewicz (2014) contends that for regulation to be effective, regardless of its quality, the enforcement mechanisms on which the regulation depends must similarly be functioning well. Lack of stringent enforcement mechanisms may result in the inefficient and inappropriate application of the law. Daniel, Cieslewicz, and Pourjalali (2012) suggest that institutional infrastructure play a significant role in ensuring quality disclosure and transparent corporate practices, through both formal processes such as law and regulation and informal mechanisms such as norms and conventions. Underscoring the role of enforcement mechanisms, Shleifer (2005) contends that strategies to implement a socially desirable policy are imperfect and that optimal institutional design involves a tradeoff between imperfect alternatives. As a result, implementation and enforcement are central to the success of regulation. Surprisingly, the accounting and finance literature has given less attention to the issue of enforcement, even though enforcement is critical to the active application of regulations (Barth & Israeli, 2013; Christensen et al., 2013; Leuz, 2010).

Given that the prevailing financial market regulations in many countries have failed to keep abreast of the fast evolving development of the financial markets and the investors' myriad practices (Dodd, 2002; Kim, Koo, & Park, 2013), there has been a number of financial regulatory initiatives, particularly in the U.S and the EU, aimed at reducing market abuses and investors' irrational exuberance. For example, Reg. FD was introduced in the U.S with the aim of reducing information asymmetry and ensure that firms' material private information is fair and accessible to all investors (Li, Saunders, & Shao, 2015; Yu & Webb, 2017). The SEC and the advocates have further stressed that the adoption of this new regulation would lead to fairer markets by ensuring immediate dissemination of information to all the market participants simultaneously (Irani & Karamanou, 2004).

In Europe, however, efforts towards protecting investors, enhancing quality disclosure, and reducing financial market abuses have cropped up since 1999 (Christensen et al., 2011; Christensen et al., 2013; Christensen, Lee, & Walker, 2008). These include the introduction of FSAP in 1999, MAD in 2003, TPD in 2004, MiFID in 2007. All these regulatory initiatives are designed to ensure transparency and investor protection across the EU financial markets. However, the questions as to whether these series of financial regulations achieve their designed objectives are still open for an empirical answer. In light of this, this study postulates as follows:

Hypothesis 2: There is a positive relationship between financial market regulatory infrastructure and investors' herding practice in the equity market.

4.7.3 The Role of National Economic Culture on the Effect of Financial Regulatory Changes (RQ3)

Culture is evidently a major influencing factor on individual behavior and decision-making. Ample literature has documented the influence of culture on accounting, economics, and finance, including its presumed effects on governance and regulations

(Chang & Lin, 2015; Cieslewicz, 2014; Daniel et al., 2012; Hauff & Richter, 2015; Lodorfos & Boateng, 2006; Perera, 1994; Hector Perera et al., 2012; Perera, 1989; Qu & Leung, 2006). It is, therefore, very natural to assume that these behavioral effects would as well influence economic outcomes and decision making across borders (Aggarwal & Goodell, 2017).

Prior literature has shown that culture has both direct and indirect influence on economic activities including changes in financial regulations (Borker, 2014; Gray et al., 2015; Wehrfritz & Haller, 2014). For example, Perera (1994) argues that financial reporting regulation cannot be culture-free since it concerns accounting activities involving the interaction of human society. Hence, diversity in cultural values across countries affects in different degree the adoption and application of corporate reporting regulations (Borker, 2014; Wehrfritz & Haller, 2014). Reinforcing this line of thinking, Gray et al. (2015) show that it would be excessively ambitious to assume that mere adoption of reporting standards like IFRS would lead to reporting quality, given the heterogeneous nature of institutional and cultural characteristics across countries.

Ali et al. (2016) also support this argument by suggesting that before introducing a change in reporting regime, regulators and policymakers should bear in mind the fundamental elements of culture. According to the authors, countries, for example, characterized with cultural values of collectivism and secrecy are likely to show a higher degree of power distance and uncertainty avoidance, relative to those exhibiting individualism and masculinity. Relatedly, Haxhi and Van Ees (2010) find that cultural trait of individualism leads to a stronger tendency to develop codes of good governance. Bae, Chang, and Kang (2012) show that the cultural dimensions of masculinity, uncertainty avoidance, and long-term orientation significantly influence firms' dividend policies. However, the strength of this relationship is found to be different with the depth of corporate governance, measured by the degree of investor protection. Utilizing

measures of culture, leadership, and organizations, Daniel et al. (2012) provides evidence suggesting that national economic culture has an impact on the institutional environment, which in turn influences corporate governance.

The effect of culture on institutions is also established empirically in Tabellini (2010) and Stulz and Williamson (2003). Greif (2006) posits that institutions arise from "a system of rules, beliefs, norms, and organizations that together generate regular social behavior." Given that Hofstede describes culture as the "collective programming of the mind which distinguishes the members of one human group from another"(Hofstede & Bond, 1984; Hofstede & Bond, 1988). Daniel et al. (2012) argue that this "collective programming" not only differentiates "one human group from another," it also helps in distinguishing of countries' institutional environment. In this regard, Aggarwal and Goodell (2017) aver that if Hofstede's definition is to be considered one can understand the argument in David (1994) and Greif (2006) who contend that institutions are the product of a national culture with current institutions evolving in path-dependent interactions between culture and historical events. Thus, the influence of national culture on institutional infrastructure is evidently signified through the focus of cultural aspects in many other studies (Aguilera & Jackson, 2003; Li & Abiad, 1990; North, 1991).

While there are theoretical and empirical arguments on the influence of national economic culture on financial regulations and the institutions that enforce them, there seems to be a lack of evidence focusing on the recent EU financial regulatory changes. The influence of culture on the economic effect of these regulatory changes mostly receives no explicit recognition and hence has not been adequately estimated (Nurunnabi, 2015; Borker, 2014). This is surprising given that EU is a collection of countries that have `different cultural, economic, and political backgrounds. Given this heterogeneity in economic and cultural roots, the member states can be viewed as different stakeholders in the regulation setting process. This means that some member states may have had to

make a greater conceptual shift, and consequently incur greater costs, than others. Such heterogeneity in national economic and cultural backgrounds can be demonstrated by reference to institutional infrastructure, corporate ownership and governance mechanisms, and fundamental accounting concepts.

To this end, when embarking on any regulatory reform, it is important to ensure that such reform is made in agreement with the prevailing national culture as postulated by institutional theory. The institutional theory essentially shows that the actions of an entity are only legitimate, proper, desirable, or appropriate if they are in sync with a socially constructed system of beliefs, norms, values, and definitions (Tilling, 2004).

In line with the theoretical argument, therefore, it can be conjectured that the differences in value system, in other words, national culture, among the EU countries are likely to affect the acceptance and application of IFRS and other financial market regulations. Thus, the study hypothesizes thus;

Hypothesis 3: National economic culture moderates the effect of financial regulatory changes on investors' herding practice.

H3a: Ceteris paribus, national economic culture, particularly the degree of power distance, moderates the effect of financial regulatory changes on investors' herding practice.

H3b: Ceteris paribus, national economic culture, particularly the degree of uncertainty avoidance distance, moderates influences the effect of financial regulatory changes on investors' herding practice.

H3c: Ceteris paribus, national economic culture, particularly the degree of individualism, moderates the effect of financial regulatory changes on investors' herding practice.

H3d: Ceteris paribus, national economic culture, particularly the degree of masculinity, moderates the effect of financial regulatory changes on investors' herding practice.

H3f: Ceteris paribus, national economic culture, particularly the degree of Long-term Orientation, moderates the effect of financial regulatory changes on investors' herding practice.

4.8 Chapter Summary and conclusion

This chapter provides an overview of the underpinning theories, research framework, and hypotheses developed for the study. The next chapter discusses the methodology used in this research to achieve the given research objectives.

CHAPTER 5: RESEARCH METHODOLOGY AND DESIGN

5.1 Introduction

So far, previous chapters of this thesis try to establish the inspiration and justification for the conduct of this study. As previously observed, the effect of IFRS and financial market regulations on investors' trading behavior generally requires further scrutiny. It is also noted that despite the influence of national economic culture in shaping information environment, the role of this significant factor around the new regulatory changes has not been fully evaluated. The review of the extant literature reveals that there is need to gain an insight on how these regulatory changes affect investors' trading behavior, particularly those behaviors that tend to defy the validity of EMH (in this context herding behavior) while highlighting the role of national economic culture. This gap in the literature led to the development of the study's research questions in chapter one and the research framework in Chapter 3.

The purpose of this chapter, therefore, is to explain the research methodology employed by the researcher to provide answers to the set research questions. To start, the chapter highlights briefly what constitutes the research philosophy; epistemology, ontology, and methodology embraced by the researcher; which is addressed in section 5.2. Guided by the study's research objectives, the rationale for the choice of a research paradigm is also explained in section 5.3. The remainder of the chapter will then discuss the methodology used to achieve the set research objectives.

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5.2 Ontology, Epistemology, and Methodology

Research is not conducted in a vacuum. It must be framed within a research paradigm (Henning, Van Rensburg, & Smit, 2004; Moslemi & Nikseresht, 2013). A paradigm is a worldview or a set of assumptions that guide how problems should be understood and addressed (Kuhn & Hawkins, 1963). When embarking on research endeavor, it is always advisable for a researcher to first have a basic understanding of the research philosophies and the paradigm appropriate for his/her inquiry. Guba (1990) argues that the choice of a research paradigm is based on three fundamental questions, which can be described as; ontological, epistemological, and methodological (Kornblith, 1988; Popkewitz, Tabachnick, & Zeichner, 1979). The answers to these questions will guide the researcher in identifying his/her suitable research paradigm.

As a branch of philosophy, epistemology concerns with issues of what is considered an acceptable knowledge in a particular field of endeavor. This philosophical assumption tends to describe some approaches a researcher can choose to understand the real world (Zinkhan & Hirschheim, 1992). It is by definition the theory of knowledge that guides the fundamental choices researcher can make in an attempt to know something and provide answers to a daunting variety of senses in areas of social sciences. According to Rawnsley (1998), terms, like inferring, perceiving, imagining, reflecting, believing, corroborating, and constructing, are all examples of the processes encompassed in the scope of epistemology. Rawnsley (1998) further asserts that the epistemological assumptions are often intrinsic to all the exploratory methods. Thus, the fundamental question in epistemology is whether there are required and necessary grounds for validating particular belief and rebutting skepticism.

The ontology, on the other hand, is defined as the theory of what exists (Crotty, 1998). It concerns with the nature of reality (Tuli, 2011). It is a system of belief that reflects an interpretation of an individual about what constitutes a fact. The ontological assumptions

attempt to provide answers to the question such as 'what is there that can be known?' or 'what is the nature of reality?' (Bryman & Bell, 2015; Guba, 1990; Guba & Lincoln, 1994). It should, however, be noted that while the ontological assumptions of one researcher cannot only be fundamentally different from those of another; they can also be very conflicting or entirely unconnected (Rawnsley, 1998).

To this end, the researchers' view on epistemological (theory of knowledge that informs investigation) and ontological (beliefs about the nature of reality and humanity) assumptions will provide the basis for selecting the appropriate methodology, i.e., how knowledge will be acquired (Tuli, 2011). In other words, methodology involves the techniques of providing information that is believable. Its scope can be as restrictive as precision in measurement and mathematical analysis of data (Dancy, Sosa, & Steup, 2009; Rawnsley, 1998). Simply put, the methodology is a research approach that translates ontological and epistemological principles into guidelines that indicate how research is to be conducted (Sarantakos, 2012).

5.3 Research Paradigm

Research has been described as an organized and systematic inquiry whereby data are collected, analyzed and interpreted in some way to understand, describe, predict or control a particular phenomenon (Sekaran & Bougie, 2016). O'Leary, (2004) argues that what was relatively simple to define three or four decades ago has become far more complicated in recent times, with the number of research methods increasing dramatically particularly in the social/applied sciences. This growing complexity may help in justifying why scholars tend to differ in their beliefs on how research should be conducted (Krauss, 2005). These different views of scholars according to the author are divided into three main paradigms, namely, positivist, interpretivist and critical theory. The inclination to any of these paradigms is primarily determined by the set objectives and the methodology to be employed by the researcher.

The positivist paradigm, otherwise known as objectivist or empiricist assumes that phenomena can be explored as facts, and the link between these facts can be established as scientific laws (Smith, 1998), without being affected by language, thought or other social practices (Krauss, 2005). To them, the social phenomenon can be studied the same way with natural phenomenon, so that the method can be value-free, and explanations of a causal nature can be objectively provided (O' Leary, 2004). Accordingly, positivists researchers argue that knowledge can be acquired based on hypotheses, formulated from theory and subsequently tested empirically (Bryman & Bell, 2015). This argument is premised on the fact that the researcher is objective, detached, and independent of the phenomena being investigated (Healy & Perry, 2000). In the positivist paradigm, the researcher is expected to employ a value-free approach to study various social events, in the quest for causality. This is typically done using the quantitative methodology, which involves the use of questionnaire surveys, experiment, and cross-sectional and/or longitudinal data analysis.

However, owing to its reliance on the empirical and rational inquiry of general causality, critics describe the positivist paradigm as "naïve realism" (Guba & Lincoln, 1994). They argue that people are intricate and complex who experience social and physical reality in distinct ways. As such, the people's views will to a significant extent influence how they perceive the world (Bryman & Bell, 2015; Mutch, 2005). For this reason, the interpretivist paradigm embarks on the task of understanding what impact the social world has for social members who live within it. To them, the world is socially constructed, and people are not just dummies who respond to external social forces as claimed by Positivists. Specifically, the interpretivists seek to know the meanings of social phenomena by understanding people's cultural activities, values, and belief or through the eyes of the actors doing the acting (Tuli, 2011). In their counter-argument, the positivists assert that interpretivist approach tends to be subjective and provides an

excellent room for bias on behalf of the researcher. The data generated in the interpretivist research cannot be generalized since personal values and viewpoints heavily impact it. Therefore reliability and representativeness of data in this approach are to some extent undermined (Krauss,2005; Smith, 1998).

The other end of the paradigm spectrum is critical research. Critical research paradigm assumes that social reality is historically constituted and that it is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, critical researchers recognize that their ability to do so is constrained by various forms of social, cultural and political domination (Myers, 1997). These social and cultural phenomena will also have an impact on knowledge formation (Guba & Lincoln, 1994). The main task of critical research is seen as being one of social critique, whereby the restrictive and alienating conditions of the status quo are brought to light. Critical research focuses on the oppositions, conflicts, and contradictions in contemporary society, and seeks to be emancipatory, i.e.; it should help to eliminate the causes of alienation and domination. Conventional research methods used in this paradigm include ethnographic and historical studies that can be conducted using either qualitative or quantitative method (Healy & Perry, 2000).

Having discussed the various research philosophies and paradigms, the following section discusses the research paradigm adopted by this study.

5.4 The chosen paradigm

The adoption of the current research paradigm was principally guided by the set research objectives and research questions of this study. Just to recapitulate, the research questions governing the conduct of this study are listed follows:

RQ 1. Does the mandatory IFRS adoption promote or inhibit investors' herding practice in the EU equity markets?

RQ 2. What is the impact of the EU financial market regulatory infrastructure on investors' herding practice in the equity market?

RQ3. What is the role of national economic culture on the effect of financial regulations on investors' herding practice in the equity market?

The above research questions are conceptualized in the research framework, as previously illustrated in Fig 4.1 in chapter 4. The framework highlights the variables of interest in this study. Of prime interest is to test the link between the new reporting and financial market regulatory directives on the level of investors' herding practice. To explore this nexus, the study adopts a positivist research approach, which emphasizes the objective and quantitative measurement of social phenomena. The researcher sees himself fitting best within the positivist paradigm, as the phenomenon to be investigated in the study is external, thus demanding an independent stance in observation of the variables. This is because the questions that seek to be answered involve real-world issues and problems; therefore, the study will rely on econometric techniques via the use quantitative and statistical method to provide answers to the set questions.

5.5 Data and Sample of the Study

The study adopts a cross-country focus and attempts to examine the capital market effect of EU financial regulatory changes from the perspective of investors' behavioral patterns in the equity markets. However, since the term EU is one common name for one happy family[1], the sample countries for this study consists of four major European markets that are commonly assumed to serve as sufficient representative of the EU member states in terms of their legal origin, namely; France (Continental-French group), Germany (Continental-German group), Sweden (Continental-Swedish group) and the

[1] The EU jurisdiction consists of 28 member states.

United Kingdom (Common Law- British group). This categorization is based on the previous study by Platikanova & Perramon (2012) who examine the impact of IFRS adoption by the representative European countries on market liquidity. This method of EU countries classification seems to provide a better and more refined categorization in comparison to the commonly used approach where the countries are usually grouped into only two legal origin groups: Code-law (Continental) and Common-law group.

Furthermore, while one may argue that herding phenomenon is likely to be more prevalent in emerging relative to the developed markets, the consideration of highly developed markets in this study is informed by the fact that these markets should reflect an environment where EMH is expected to hold. Challenging EMH in these markets would, therefore, cast strong doubts over the theory behind the hypothesis. Besides, a plethora of studies as evident in the review of the extant literature above provides evidence suggesting that herding practice exists in both highly developed and emerging financial markets. Notwithstanding, this study considers three emerging EU equity markets; Czech Republic, Hungary, and Poland to serve as a control sample. These markets are arguably the largest and the most active emerging equity markets in the central and Eastern Europe (CEE), and have been expanding dramatically since the 1990s when they began their integration into the EU (Chau et al., 2013). Moreover, these emerging EU countries in preparation for their accession to the union, coupled with their incessant interest to comply with the EU regulations, smoothly aligned their local standards to IFRS since before their official accession (Chau et al., 2013; Christensen et al., 2013).

The dataset of this study consists of monthly closing prices of the major constituents; France-CAC40 (37 stocks), Germany-DAX 30 (27 stocks), Sweden-OMX30 (26 stocks), UK-FTSE 100 (86 stocks). Czech-PRAGUE (12 stocks), Hungary-BUX (19 stocks), and Poland-WIG20 (17). This study limits the sample to stocks that are constituents and trade

since January 2000. Hence, the study includes both active and dead stocks, so that the dataset can be free of survivorship bias. It is, however, important to state that all the markets considered in this sample are by EU Directive; Reg. No 1606/2002 required to comply with IFRS reporting requirements as from 1/1/2005. The sample period stretches from 11-1-2000 to 31-12-2016. The year 2000-2004 is considered as the pre-IFRS adoption period and the years 2005 to 2016 as the post-IFRS adoption period.

Monthly returns for the constituent stocks are calculated as follows: $R_{i,t}$ = (ln (P_t)-ln (P_{t-1})) *100. Where $R_{i,t}$ is the observed stock return of firm i at time t, and P_t and P_{t-1} are the closing price of the individual stock at time t and t-1. The market returns ($R_{m,t}$), which is needed to calculate the CSAD measure is equally calculated. All data are obtained from DataStream. Furthermore, the Six World Governance Indicator (WGI) index developed by Kaufmann, Kraay, and Mastruzzi (2009); Regulatory Quality index, Rule of Law index, Voice and Accountability index, Political Stability index, Control of Corruption index, and Government Effectiveness index are used to measure the quality of EU financial market regulatory changes and enforcement. The study also adopts the national culture dimensions proposed by Hofstede (2001) to measure the influence of national economic culture on the effect of financial regulatory changes. Hofstede (2001) investigates 88,000 IBM employees in 72 countries around the world, using a questionnaire, and quantified the five dimensions of national nature: Power distance, individualism, masculinity, uncertainty avoidance, and long-term orientation.

Table 5.1: Summary Statistics of Country-wise Monthly CSAD of Returns and Rm

Country	Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
Czech Republic	CSAD	0.0661	0.0725	34.8267	0.0000	4.4203	2.0603	10.2126
	Rm	0.1061	0.9645	3.8350	0.0000	0.8213	0.8123	3.4555
France	CSAD	0.1828	0.5033	13.4491	2.5394	2.0799	1.4835	5.1373
	Rm	0.4097	0.4038	29.9031	0.0682	4.1205	2.4997	13.2556
Germany	CSAD	0.1662	0.7215	32.4419	0.2891	5.2384	2.2705	9.5441
	Rm	0.8867	0.9213	31.2337	0.0000	4.4516	2.5057	12.8305
Hungary	CSAD	0.1749	0.1611	34.8267	2.2360	4.4364	2.0415	9.9012
	Rm	0.1420	0.7132	33.4403	0.0571	4.4627	1.9055	10.0622
Poland	CSAD	0.0531	0.8910	13.0253	0.0109	0.9987	8.7182	103.3242
	Rm	0.7938	0.6347	4.5161	0.0000	0.7119	1.6008	6.7672
Sweden	CSAD	0.0453	0.3466	23.4276	2.6321	2.8328	2.2681	11.3423
	Rm	0.2700	0.3648	21.4131	0.0000	3.6324	1.4347	5.5649
UK	CSAD	0.4203	0.7030	15.6588	0.0000	5.2662	1.8234	7.4837
	Rm	0.4361	0.7309	31.0960	0.0000	3.4512	3.4681	23.7891

Obsevations: 1414

Notes: This table reports descriptive statistics for the measure of monthly cross-sectional absolute deviation (CSAD) of individual stock returns concerning the market portfolio return and the market return (Rm) for the Czech, French, German, Hungarian, Polish, Swedish, and British market for the period 1-11-2000 till 31-12-2016. The CSAD measure is defined in Eq (2).

Table 5.1 reports the descriptive statistics for the monthly CSAD and overall market returns for the entire sample markets. The table shows that the mean values for CSAD of the sample markets differ across countries, with the highest value found in the UK, whereas Sweden reports the lowest. The highest mean value for market return is found in Germany and the lowest in the Czech Republic. As in the mean values, the highest standard deviation value for CSAD is found in the UK, while the lowest value is found in Poland. Higher standard deviation shows that the market has significant cross-sectional variation. Moreover, the value of skewness for all the sample markets is positive while the value of kurtosis is above three across the sample markets.

5.6 Detecting investors' herding practice

To test the hypotheses that mandatory IFRS adoption and changes in securities regulation promotes or discourages investors' herding tendency, the study employed and modified two extensively applied herding measures of Cross-Sectional Standard Deviation (CSSD) and Cross-sectional Absolute Deviation (CSAD) proposed by CH and CCK respectively, using stock return dispersion as a function of aggregate market return as a proxy for herding behaviour. These measures have been widely recognized and recently applied in several studies (e.g., Chang & Lin, 2015; Demirer & Kutan, 2006; Garg & Gulati, 2013; Tan, Chiang, Mason, & Nelling, 2008). The rationale behind these herding measures is that limited deviation of returns around their cross-sectional average implies that investors ignore their prior heterogeneous information and follow the market consensus in their trading patterns.

Specifically, CH CSSD measure was calculated as per equation (1) as follows:

$$\mathrm{CSSD} = \sqrt{\frac{\sum_{i=1}^{N}\left(R_{i,t}-R_{m,t}\right)^2}{(N-1)}} \qquad (1)$$

The approach utilized the standard deviation of the individual stock returns with the overall market returns as a proxy for the average return. Where, N, is the number of stocks in the sample, $R_{i,t,}$ is the observed daily return on stock i at time t, $R_{m,t}$, is the overall market returns at time t. However, given that squared return-deviations calculate CSSD measure, it is therefore likely to be more prone to outliers. To overcome this problem, CCK proposed an alternative and more powerful measure, using cross-sectional absolute deviation (CSAD) in a nonlinear regression specification. Specifically, for each stock i of the N stocks and each day t, the difference between the individual stock's return($R_{i,t}$) and the overall market return ($R_{m,t}$) is first calculated, and then the CSAD is estimated in equation (2) as follows

$$\text{CSAD} = \frac{1}{N}\sum_{i=1}^{N}|R_{i,t} - R_{m,t}| \quad (2)$$

According to the rational asset pricing model (e.g., CAPM); the relationship between individual stock returns and overall market returns should always be positive and linear because each stock has different sensitivity to reflect the various beliefs held by investors in a rational market (Tan et al., 2008). Thus, the efficient market theory posits that in a rational market investors will react to relevant information distinctly because these investors form rather a heterogeneous group, they vary in terms of capital resources, investment experience, and information processing (Belhoula & Naoui, 2011).

Given this heterogeneous background, we, therefore, expect them to differ in their investment strategies. However, CCK argue that if investors suppress their heterogeneous information and follow the market aggregate in their investment strategies, then this relationship expected by the CAPM becomes non-linear. Thus, herding behavior is enough to change the linear relation to a non-linear one. In this regard, the authors suggested the following approach as per equation (3) that allows the detection of herding behavior for the entire market return distribution.

$$CSAD_t = \propto + \gamma_1 |R_{m,t}| + \gamma_2 R_{m,t}^2 + \varepsilon_t \quad (3)$$

Where; the square market returns ($r_{m,t}^2$) is used to capture the nonlinearity in the relationship, α is constant, γ_1 and γ_2 are coefficients, ε_t is the error term at time *t*. Herding behavior exists in the market if $\gamma_2 < 0$ (negative and statistically significant), and is absent if $\gamma_1 > 0$ and $\gamma_2 = 0$. Therefore, the researcher estimates the above benchmark model (see, equation 3) to test whether market-wide herding exists in the sample markets. It is important at this juncture to emphasize that this model uses ex-post data to test for the presence of herding behavior in the market via the average relationship between realized $CSAD_t$ and $R_{m,t}$. Therefore, the reader should bear in mind that CSAD is not a measure of herding, instead the relationship between $CSAD_t$ and $R_{m,t}$ is used to detect herding behavior (Chang et al., 2000; Galariotis et al., 2016), by focusing on possible non-linearity in the asset pricing model. As yet, the CCK model is one of the most prominent and widely applied herding measures in the behavioral finance literature.

However, prior literature argues that herding behavior might be asymmetric under different market conditions. For example, herding is likely to be more prevalent during abnormal information flow or extreme market movement (e.g., crisis period) (Economou et al., 2011; Galariotis et al., 2015). To capture this effect, Economou et al. (2011) consider days with positive market returns as a period of normal information flow (upmarket) and days with negative market returns as a period of abnormal information flow (downmarket). In a similar spirit, the researcher estimates the following regression to detect the evidence of herding discretely for days with positive returns (upmarket) and days with negative returns (down market) as per equation (4) and (5) as follows:

$$CSAD_t^{up} = \alpha + \beta_1^{up} + \left|R_{m,t}^{up}\right| + \beta_2^{up}\left(R_{m,t}^{up}\right) + \varepsilon_t \quad (4)$$

$$CSAD_t^{Down} = \alpha + \beta_1^{Down} + \left|R_{m,t}^{Down}\right| + \beta_2^{Down}\left(R_{m,t}^{Down}\right) + \varepsilon_t \quad (5)$$

Consequently, as highlighted in the preceding discussion, the fundamental objective of this study is to test whether investors' propensity to herd changes following two major regulatory changes-mandatory IFRS adoption and changes in financial market regulatory infrastructure. Following earlier studies (e.g., Galariotis, et al. 2015; Galariotis et al. 2016; Blasco et al., 2017), this study augments the benchmark model, i.e., the equation (3) with two additional variables and four control variables to test the study's first two hypotheses, as follows:

Testing the research hypotheses

5.7 Estimating the evidence of herding around mandatory IFRS adoption (H1)

Equation (6) presents the model that attempts to test whether the adoption of IFRS influences investors' herding practice in the equity market.

$$CSAD_t = \propto + \beta_1 |R_{m,t}| + \beta_2 R^2_{m,t} + \beta_3 DUM(R^2_{m,t}) + \delta Macroinf_t + \omega LogGDP_t + \varepsilon_t \quad (6)$$

In equation (6) DUM denotes a dummy variable designed to capture the non-linearity in the relationship (i.e., evidence of investors' herding behavior) around mandatory IFRS adoption. The dummy variable takes the value of one for the post-adoption period 2005-2015, i.e., from the year IFRS compliance became mandatory in the EU Jurisdiction, and zero otherwise. Recall, CSAD is not a measure of herding, instead the relationship between $CSAD_t$ and $R_{m,t}$ is used to detect herding behavior. Therefore, following Galariotis et al. (2015), Galariotis, et al. (2016), and Blasco et al., (2017), this study uses the above-augmented model (equation, 6) to capture the IFRS adoption effect on investors' herding propensity. A negative and statistically significant coefficient of (β_3) in equation (6) will suggest that the new reporting benchmark has promoted investors' herding, while a positive and statistically significant coefficient of the (β_3) will suggest otherwise. Moreover, given that investors' herding practice is likely to be affected by

some factors, such as important macroeconomic information (Galarioti et al., 2016), and the level of capital market development (Blasco et al., 2017). Hence, the macroeconomic variables that have proven to affect the intensity of investors' herding practice in the prior literature are included as control variables. Namely, changes in interest rate, money supply, and consumer confidence (Galariotis et al., 2015; Javaira & Hassan, 2015). According to Javaira and Hassan (2015) change in interest rates influences the theoretical value of firms and their shares. A share's fair value is its projected future cash flows discounted to the present using the investor's required rate of return. Thus, if interest rates fall and other things being equal, share value should rise and vice versa. Regarding the money supply, the authors describe money supply as a measure of liquidity available to investors. More liquidity indicates more investment and excessive demand for equity that ultimately results in upward movement of nominal equity price. In addition to these variables, the present study includes a natural logarithm of GDP per capita as a proxy for capital market development in the regression models another control variable, in line with (Blasco et al., 2017).

5.8 The Measure of Financial Market Regulatory Infrastructure on Investors' herding tendency

One common concern that arises when interpreting the effects of IFRS in the EU jurisdiction is how to separate the impact of other relevant financial market regulatory directives that took place prior, concurrent and after the adoption of IFRS. To address this concern, and in contrast to most previous studies, this study attempts to explore the effect of these EU financial market regulatory changes on investors' herding practice. In doing so, the study employs one of the most comprehensive regulatory and governance measure popularly known as World Governance Indicators (WGI) developed by Kaufmann et al. (2009) to achieve the second research objective. The reasons for using these regulatory and governance indices are twofold. First, it is argued that mere changes in financial

market regulations do not necessarily ensure compliance. Christensen et al. (2011) show that financial regulatory consequences typically depend not only on the regulations but also on how the regulations are implemented and enforced. Second, most of the EU financial market regulatory directives recently introduced are principally geared towards tightening enforcement by way of improving supervisory regimes. Therefore, the use of WGI would allow us to gauge both the effectiveness of the new EU regulations as well as their enforcement, as the measure comprises of six dimensions of governance that are deemed appropriate to capture both the aspects of regulatory quality as well as their enforcement.

Furthermore, the indicators are rich and comprehensive as they capture the views of a large number of expert, enterprise, and citizen worldwide. They are based on over 32 different data sources from a variety of survey institutes, international organization, think tanks, governmental and non-governmental organizations, and private sector firms (Kaufmann et al., 2009; Kaufmann, Kraay, & Mastruzzi, 2011). The indices are updated annually to measure the quality of governance in about 212 countries and territories, and thus receive a rigorous review by their originators to ensure consistency and reliability across countries over time. They have as well been subjected to considerable scrutiny by academics and policymakers (Daniel et al., 2012). Hence, their reliability and validity are ensured.

These indices are briefly discussed below.

i. **Regulatory Quality (RQ):** measures the extent to which the government can formulate and implement sound policies and regulations that permit and promote private sector development. The efficient regulatory system would encourage desirable investment behavior and discourage undesirable ones.

ii. **Rule of Law (RL):** refers to the extent of influence of law within a given country, mainly as a constraint on societal behavior. A country with a high rule of law score will ensure strict compliance with societal rules and regulations, including accounting and reporting standards. Adherence to the country's financial and reporting regulations would encourage information-based trading and reduce irrational investment behaviors like herding.

iii. **Voice and accountability:** measures the extent to which members of the society are allowed to participate, express, and exercise their views in policymaking processes. A country with a high voice and accountability score is likely to ensure that market participants are critical players in formulating regulations that will provide them access to quality and reliable information for a rational investment decision.

iv. **Political stability:** This index measures the degree to which the government of a country will be destabilized by violent or unconstitutional means. Political instability increases uncertainties and erodes investors' confidence, which in turn might cause investors to disregard their market information analyses and mimic the actions of victorious market investors.

v. **Government effectiveness:** This index measures the quality of public services and effective policy formulation and implementation, as well as the credibility of the government's commitment to such policies. In this context, effective implementation of IFRS would reduce investors' information uncertainties, thereby mitigating investor' behavioral anomalies like herding and noise trading that may pose to undermine the stability of the financial market.

vi. **Control of Corruption:** this measures the extent to which public power is used for private gain. The index captures the extent of corruption, cronyism,

and government efforts to tackle it. Perceived corruption is an issue that affects the national and international investors' sentiments and their willingness to invest in a country's financial market. A country characterized by a low level of corruption is likely to have a transparent corporate disclosure practice, which in turn would encourage fundamental-based trading in the financial market.

Following prior studies, (see, Jaggi & Low, 2011; La Porta et al. 2006), this study measures financial market regulation (FINREG) by using the arithmetic mean of these six indicators; Regulatory Quality index, Rule of Law index, Voice and Accountability index, Political Stability index, Control of Corruption index, and Government Effectiveness index. These indices have been used jointly and in isolation in prior empirical research to arrive at a common index for governance and enforcement.

Therefore, to test the hypothesis relating to the financial market regulation (H2), the study modifies the benchmark model as per equation (7) below, by incorporating the financial market regulation variable; just as in the case of IFRS above.

$$CSAD_t=\propto+\beta_1|R_{m,t}|+\beta_2 R^2_{m,t}+\beta_3 FINREG(R^2_{m,t})+\delta Macroinfo_t+\omega LogGDP_t+\varepsilon_t \quad (7)$$

In equation (7) FINREG symbolizes a variable designed to capture the effect of financial market regulatory changes on investors' herding practice. A negative and statistically significant coefficient of (β_3) in equation (7) will suggest that financial market regulation promotes investors' herding behavior; otherwise, no herding exists around this regulatory changes.

5.9 The Combined Effects of IFRS and Financial Market Regulatory Infrastructure

In addition to testing an isolated effect of the two facets of EU regulation, this study further estimates the joint effect of these regulatory changes on investors' herding practice. This is presented in equation (8) below:

$$CSAD_t = \propto + \beta_1 |R_{m,t}| + \beta_2 R^2_{m,t} + \beta_3 DUM(R^2_{m,t}) + \beta_4 FINREG(R^2_{m,t}) + \delta Macroinfo_t + \omega LogGDP_t + \varepsilon_t \quad (8)$$

If the coefficients of the two regulatory changes (β_3) and (β_4) in equation (8) are negative and statistically significant, it suggests that the IFRS and financial market regulatory infrastructure have a combined effect of inducing herding behavior, while a positive and statistically significant coefficient (β_3) and (β_4) suggest otherwise.

5.10 Measuring the role of national economic culture

To test the role of the national economic culture around financial regulatory changes, I used the Hofstede's (1980, 2001) five cultural dimensions. These indices are usually used in cross-cultural research and are arguably considered the most prominent than any other competing cultural dimensions (Tang and Koveos, 2008). Nevertheless, despite its profound influence, Hofstede's cultural framework has received a lot of criticism (Baskerville-Morley, 2005; McSweeney, 2002; Smith, 2002). One of such is that the data used has not been updated for over 30 years (Daniel et al., 2012; Tang and Koveos, 2008). To test this assertion, we used Hofstede's cultural scores updated by Tang and Koveos (2008) in our confirmatory analysis.

These dimensions are briefly described below:

i. **Power Distance (PD):** This refers to the extent of inequality that exists in society, and is accepted by people with and without power. Thus, investors in

a society with higher PD score are more likely to accept an unequal distribution of information, which in turn might promote information asymmetry and by extension herding practice.

ii. **Individualism (IND):** This refers to the extent to which people in society have a loose interpersonal connection and care only about themselves and their immediate family. Investors in a society with a low level of individualism are likely to trade in a contemporaneous manner by mimicking the action of others even if their signals suggest otherwise.

iii. **Uncertainty avoidance (UA):** This refers to the extent of society's tolerance for uncertainties and complexities. Investors in a higher UA society tend to assume that others are better informed and have vital information that they lack. As such, they find it safe to suppress their information and follow the market consensus. To them, using their information signal is likely to incur more costs and less benefit.

iv. **Masculinity (MAS):** this refers to a preference for material achievement, assertiveness, and heroism. A high MAS score suggests that investors are likely to engage in opportunistic investment behavior, for example by disregarding their information analysis and follow the action of victorious market investors to satisfy their ego.

v. **Long-term orientation (LTO):** refers to a degree to which people in a society need to explain the inexplicable to help in the search for future orientation. Investors in lower LTO society are not likely to exhibit persistence and perseverance in using market fundamental variables in the investment decision. Instead, they might be influenced by the opinion of others.

The following table indicates the scores for each of the dimensions for each country in the sample.

Table 5.2: Hofstede Cultural Scores for the Sample Countries

Country	PD	IND	MAS	UA	LTO
Czech	57	58	57	74	70
France	68	71	43	86	63
Germany	35	67	66	65	83
Hungry	46	80	88	82	58
Poland	68	60	64	93	38
Sweden	31	71	5	29	53
UK	35	89	66	35	51

Therefore, following Chang and Lin (2015), the study considers the coefficients of interest ($D\beta_3$) in equation (6) & (7) (which estimates the effect of the two financial regulatory changes discretely) as a dependent variable, in each case, to examine the role played by the national economic culture; being an informational institutional factor on each observed financial regulatory effects on investors' herding tendency. In this way, if the coefficient of interest (β_3) in each of the cases has a significant positive value, then $D\beta_3$ =1; if $D\beta_3$ has a significant negative value, then $D\beta_3 = -1$; otherwise, $D\beta_3 = 0$ and then the researcher runs a multinomial logistic regression analysis as per equation (9) as follows:

$$D\beta_{i,3}=\vartheta_0 + \vartheta_1 PD_i + \vartheta_2 IND_i + \vartheta_3 UA_i + \vartheta_4 MAS_i + \vartheta_5 LTO_i + +\varepsilon_i \quad (9)$$

$$\sum_{h=1}^{3} \pi_h = 1 \quad (10)$$

Where PD, IND, UA, MAS, and LTO denote Hofstede cultural values of power distance, individualism, uncertainty avoidance, masculinity, and long-term orientation. The $[\pi_1, \pi_2, \pi_3]$ indicate response probability, where $\pi_1 = P(D\beta_3 = 1)$, $\pi_2 = P(D\beta_3 = 0)$, and $\pi_3 = P(D\beta_3 = -1)$, whereas $\vartheta_1, \vartheta_2, \vartheta_3, \vartheta_3, \vartheta_4, \vartheta_5, \vartheta_6$ are respective regression coefficients as shown in equation (9). If coefficient $\vartheta_1, \vartheta_2, \vartheta_3, \vartheta_3, \vartheta_4$, or ϑ_5 is positive and significantly

different from zero, it indicates that the national economic culture plays a significant influence on the effect of financial regulatory changes on investors' herding behavior.

Meanwhile, the following table tries to summarily define all the variables in this study, their sources, and how they are operationalize

Table 5.3: Operationalization of the Variables

Variables	Type of Variable	Definition	Operationalization	Source
Herding	DV	Indicates Phenomenal tendency where less sophisticated investors overlook their own market information analysis and blindly mimic the action of victorious market investors	Cross sectional standard deviation (CSSD) and Cross-sectional absolute deviation (CSAD).	Christie and Huang (1995); Chang et al. (2000);
IFRS Adoption	IV	It refers to the direct use of IFRS, issued by the IASB by a country	Dummy variable 0= Pre-adoption period 1= Post adoption period.	
Financial Market Regulation	IV	Aggregate measure of securities regulation of a country	The study employs one of the most comprehensive regulatory and governance measure popularly known as World Governance Indicators (WGI) developed by Kaufmann et al. (2009)	Kaufmann et al. (2009)
National Economic Culture	Moderating	Culture is evidently a major influencing factor on individual behavior and decision-making.	To test the role of the national economic culture around financial regulatory changes, I used the Hofstede's (1980, 2001) five cultural dimensions: (i) Power Distance (ii) Individualism (iii) Uncertainty avoidance (iv) Masculinity (v) Long-term orientation	Chang and Lin (2015)
Changes In Interest Rate	Control	Change in interest rates influences the theoretical value of firms and their shares. If interest rates fall and other things being equal, share value should rise and vice versa	Changes In Interest Rate	Galariotis et al., (2015); Javaira & Hassan, (2015).
Change In Money Supply	Control	Change in Money supply is a measure of liquidity available to investors. More liquidity indicates more investment and excessive demand for equity that ultimately results in upward movement of nominal equity price.	Change in Money Supply	Galariotis et al., (2015); Javaira & Hassan, (2015).
Consumer Confidence	Control	Consumer confidence is an economic indicator that measures the degree of optimism that consumers feel about the overall state of the economy and their personal financial situation.	Consumer Confidence Index	Galariotis et al., (2015); Javaira & Hassan, (2015).
Capital Market Develop	Control	The strength of a country's financial market	Capital market development is measured by a natural logarithm of GDP per capita.	Blasco et al., (2017)

5.11 Chapter summary and conclusion

The first part of the chapter provides an overview of the relevant theories used in this study, research framework, and the hypotheses developed for the study, while the second part discusses the study's research methods. The study presents the final study sample-consisting of 7 European equity markets: France-CAC40, Germany-DAX 30, Sweden-OMX30, UK-FTSE 100. Czech-PRAGUE, Hungary-BUX, and Poland-WIG20.

The next chapter discusses the data analysis and discussion of the empirical findings.

CHAPTER 6: DATA ANALYSIS AND DISCUSSION OF THE RESEARCH FINDINGS

6.1 Introduction

This chapter presents the data analyses and empirical findings of this study. The chapter focuses on testing the study's hypotheses in order to provide answers to the corresponding research questions. The analyses are divided into five phases. Section 6.2. The first phase tests the original CCK in section 6.2, to detect (if any) the evidence of market-wide herding. This is followed by a discussion of phase two in section 6.3, which tests the study's hypotheses by estimating the modified CCK model to explore whether financial regulatory changes. In other words, the test examines whether IFRS adoption and changes in financial market regulatory infrastructure promote or inhibit investors' herding tendency. Section 6.4 discusses phase three of these analyses. The section estimates the role played by national economic culture on the observed herding effect around financial regulatory changes. Phase four presents a confirmatory analysis in order to check the robustness of the research findings, and this is presented in section 6.5. Finally, phase five concludes the chapter by discussing the overall results.

6.2 Phase 1: CCK model

6.2.1 Estimating the benchmark model for evidence of market-wide herding

The study begins the empirical analyses by estimating the benchmark model, i.e., equation (3) for the whole sample period, to find whether herding practice exists in the sample markets. The researcher applies Newey-West's (1987) consistent estimator to correct for autocorrelation and heteroscedasticity. Table 6.1 below presents CSAD estimates for the whole sample period (11/1/2000 - 31/12/2016) and the whole sample markets.

The table is divided into two parts: panel A and panel B. Panel A reports the regressions estimates for the main sample of the study; France, Germany, Sweden, and the UK, whereas panel B provides the results for the study's control sample; the Czech Republic, Hungary, and Poland. The coefficients reported in the table are those of linear and non-linear terms. When herding practice exists, the coefficient on the non-linear term (β_2) should be negative and statistically significant. Otherwise, no herding exists in the market.

Table 6.1: Testing the Evidence of Market-Wide Herding

Market	α	β_1	β_2	Adj. R^2
Panel A: Main Sample				
France				
Full sample	0.008163 (5.90)***	0.0111(1.74)*	**-0.0085 (-1.42)**	0.4745
Up market ($R_m > 0$)	0.09842 (3.19)***	0.2540 (1.98)**	**-0.0021 (3.19)*****	0.4234
Down market ($R_m < 0$)	0.02763 (2.24)**	0.2510(3.86)***	**0.0077 (1.45)**	0.3115
Germany				
Full sample	0.003752 (2.15)**	0.1989 (3.95)***	**0.0218(1.69)***	0.4513
Up market ($R_m > 0$)	0.0419(2.31)**	0.6518 (3.12)***	**0.0116 (2.87)*****	0.2388
Down market ($R_m < 0$)	0.00381 (2.46)***	1.0377 (6.22)***	**-0.0100 (-1.10)**	0.6471
Sweden				
Full Sample	0.0535 (4.23)***	0.2921 (2.81)***	**0.0034 (1.59)**	0.4041
Up market($R_m > 0$)	0.00473 (4.42)***	0.0784(4.38) ***	**-0.5952 (-4.37)*****	0.6456
Down market($R_m < 0$)	0.0241(3.66)***	0.3152 (2.96)***	**-0.0079 (-1.81)***	0.4220
UK				
Full Sample	0.08583 (2.96)***	0.0812 (1.95)**	**-0.0067 (-2.35)****	0.3218
Up market($R_m > 0$)	0.076 (1.99)**	0.0188 (2.14)**	**-0.0111 (-1.94)***	0.1861
Down market($R_m < 0$)	0.0336 (3.29)***	0.1234 (1.29)	**-0.0049 (-2.59)****	0.4048
Panel B: Control Sample				
Czech Republic				
Full sample	0.0884 (8.34)***	0.6771 (2.92)***	**-0.0279 (-1.56)**	0.4377
Up market($R_m > 0$)	0.0640 (4.33)***	0.7564 (6.87)****	**-0.0112 (-2.39)****	0.4683
Down market($R_m < 0$)	0.0118 (7.97)***	-0.5730(-4.70)***	**0.0934 (1.44)**	0.3389
Hungary				
Full sample	0.0798 (17.64)***	0.0270 (2.81)***	**-0.0340 (-1.37)**	0.5238
Up market($R_m > 0$)	0.0770 (11.62)***	0.4331 (2.26)**	**0.0198 (1.41)**	0.4335
Down market($R_m < 0$)	0.0208 (10.67)***	0.5410 (3.99)***	**-0.0110 (-2.72)*****	0.2281
Poland				
Full sample	0.0237 (10.33)***	0.0444 (2.71)***	**-0.2054 (-2.45)****	0.5955
Up market($R_m > 0$)	0.0835 (2.01)***	0.4110 (1.82)*	**-0.0730 (-0.48)**	0.6740
Down market($R_m < 0$)	0.0765 (16.78)***	0.4620 (8.88)***	**-0.0621(-4.86)*****	0.4742

Note: This table shows the regression estimates for equation (3): $CSAD_t = \propto + \gamma_1|R_{m,t}| + \gamma_2 R^2_{m,t} + \varepsilon_t$. Where $CSAD = \frac{1}{N}\sum_{i=1}^{N}|R_{i,t} - R_{m,t}|$, $|R_{m,t}|$ is absolute market returns, $R^2_{m,t}$ is squared market return. The sample period stretches between 2001 and 2015. Values in parentheses are t-statistics. ***, **, and * symbolize statistical significance at the 1%, 5%, and 10% levels respectively.

Drawing on the regression estimates, I find that the estimated value of the coefficient on the linear term (β_1) in all the sample markets is consistently positive and statistically significant at a conventional level[2]. Specifically, the value of (β_1), for example, is **0.0111** with a *t-statistics* = **1.74** for France, **0.1989** with a *t-statistics* = **3.95** for Germany, **0.2921** with a *t-statistics* = **2.81 for** Sweden, and **0.0812** with a *t-statistics* =**1.95** for the UK. These findings strongly validate the theoretical prediction that CSAD increases with the magnitude of absolute market return $|R_{m,t}|$. As the absolute market return increases, so should the deviation in individual asset returns (see, Chang et al., 2000; Guney et al., 2017).

Furthermore, when analyzing the coefficient of the non-linear term (β_2), which is the coefficient of interest in this case, at first glance, the findings do not seem to provide supportive evidence of herding in most of the sample markets, using the full sample period. More specifically, except for the UK and Poland, the coefficient of the square market returns suggests no evidence of herding, as the value of (β_2) is either significantly positive or negative but not statistically significant at conventional level across the sample markets. These results appear consistent with those reported in Chang and Lin (2015). Their empirical results illustrate that among 50 global stock markets only 18 demonstrate evidence of herding practice based on the market-wide estimates. Conversely, Blasco et al. (2017) find that among 35 global stock markets, 30-exhibit evidence of herding practice.

[2] By conventional level, we mean statistical significance at 1%, 5%, or 10%.

However, taking a closer look at the sample markets, as shown in different market phases, i.e., upmarket ($R_m > 0$) and downmarket ($R_m < 0$), the researcher discovers that investors' herding practice exists but the phenomenon is asymmetric under different market conditions. Table 6.1 further reports that when evidence of herding is estimated during normal market condition, i.e., upmarket ($R_m > 0$), the results show that markets such as France, Germany, Sweden, the UK, and one of the control sample; the Czech Republic, which initially demonstrates no evidence of herding based on the market-wide analysis appear to exhibit evidence of herding practice in days with positive market returns (see, equation 4). In other words, the herding coefficient (β_2), after splitting the sample period into rising and falling market phases reveals that herding exists during a rising market for the above-identified markets. Although these findings tend to defy the most commonly held expectations[3], they appear consistent with those reported in Tan et al. (2008), who report that herding tendency in the Shanghai A-share market looks stronger when the market is rising. Moreover, Guney et al. (2017) also document significant evidence of herding during rising markets when examining African frontier equity markets.

With regards to herding formation during market stress ($R_m < 0$), the results reveal that countries such as the UK, Sweden, and two of the control sample; Hungary and Poland demonstrate the significant non-linear relationship between return dispersion and overall market return when the market is falling (see, equation 5), hence indicating evidence of herding practice during the down market. This evidence supports the findings of CCK that suggest that security return dispersions appear to be on average narrower on days with negative market returns. By and large, the none-evidence of herding observed

[3] That herding is likely to be more pronounced during extreme market movement or abnormal information flow.

in the full sample period, and only intermittent presence of herding in subsamples is consistent with the findings in Galariotis et al., (2015). Taken together, therefore, the researcher concludes that investors' herding practice exists in all the markets under consideration in this study, but the phenomenon largely occurs during different market phases. The implication of these findings suggests that herding practice is not limited to emerging markets, but the phenomenon is as well prevalent in highly matured markets like France, Sweden, and the UK.

Although the evidence of herding observed in the European equity markets in this study is consistent with that of Economou, Katsikas, and Vickers (2016), Economou et al. (2011), and Chiang and Zheng (2010), The present study differs from these studies in two ways. Firstly, it considers only markets assumed to represent the EU member states in terms of their legal origin, namely; France (Continental-French group), Germany (Continental-German group), Sweden (Continental-Swedish group) and the United Kingdom (Common Law- British group). By contrast, Economou et al. (2016) consider only single European (Greece) market, Economou et al. (2011) cover only four Southern European (the PIGS) markets, and Chiang and Zheng (2010) consider only three European markets (France, Germany and the UK). Furthermore, while this study uses sample period covering years between 2000 to 2016, Economou et al. (2016) cover between 2007 to 2015, Economou et al. (2011) has 1998 to 2008, and Chiang and Zheng (2010) use 1988 to 2009. However, despite the differences in the sample sizes and sample periods, one common feature between these prior studies and the present study is the establishment of the fact that herding behavior exists in the European financial markets.

Another potential implication of the co-movement in the cross-sectional returns dispersion among European markets is that it might hinder the prospect of portfolio diversification benefits. This is because investors' convergence of trading strategies would have significant implications for equity market efficiency, and might

systematically misprice financial assets and lead to the creation of asset bubbles (Mobarek and Mollah, 2013). It is for this reason, therefore, regulators and policymakers are called to pay considerable attention to this type of collective behavior, for it spurs unnecessary volatility, destabilizes markets, and increases the fragility of financial systems (Mobarek et al., 2014).

It is in light of this; the current study attempts to test whether the recent efforts by the EU policymakers to strengthen reporting and financial market regulatory infrastructure have an impact on this particular behavioral bias. The key question is whether the new regulatory changes promote or inhibit investors' herding propensity.

6.3 Phase 2: Testing the study's hypotheses

In this section, the researcher empirically tests the research hypotheses in order to provide answers to the set research questions.

Prior research has shown that the two facets of financial regulatory changes under consideration in this study are more or less bundled and difficult to disentangle (Christensen et al., 2013; Christensen et al., 2016), because the changes virtually took place around the same time. To address this concern, the researcher intends to do these analyses by testing the effect of each of the regulatory change separately (i.e., IFRS adoption and changes in financial market regulatory infrastructure) in order to get an independent and the precise estimate of each regulatory effect.

6.3.1 Estimating the Evidence of Herding Around Mandatory IFRS Adoption (H1)

Earlier research establishes that investors are more likely to exhibit herding behavior in a market with less publicly available information or high information acquisition costs (Javaira & Hassan, 2015; Yao et al., 2014; Zhou & Lai, 2009). These arguments have featured in prominent academic literature over the last few decades. In times of market

turbulence, this argument gains weight (Antoniou, Koutmos, & Pericli, 2005; Galariotis et al., 2015; Galariotis et al., 2016). The popular view tends to revolve around calls for more regulatory action to lessen the effects of investors' herding and noise trading behaviors, on the premise that these behaviors destabilize prices (Hou et al., 2013; Zhou & Lai, 2009). Therefore, given that, financial reporting regulation is one of the mechanisms used to control the operation of security markets (Palea, 2013), the adoption of high quality and transparent reporting regime like IFRS might come in handy. Hence this study hypothesizes that:

Hypothesis 1: There is a positive relationship between mandatory IFRS adoption and investors' herding practice in the equity market.

Table 6.2 reports the regression estimate for equation (6) which tests the above hypothesis. The coefficient of primary interest, in this case, is that of the dummy variable (β_3). A negative and statistically significant coefficient of the dummy variable (β_3) signifies that the mandatory adoption of IFRS promotes the observed herding practice in the equity market, while a positive and statistically significant coefficient of the dummy variable suggests otherwise.

Table 6.2: Testing the Effect of Mandatory IFRS Adoption on Investors' Herding Practice

Country	β_1	β_2	$\beta 3$	δ_1	δ_2	δ_3	ω	Adj. R^2
Panel A: Main Sample								
France								
Full sample	0.0086	0.02013	**-0.0125**	-0.0394	0.8832	-0.0016	-65.4286	0.5060
	(0.04)	(5.00)***	**(-3.02)*****	(-1.17)	(4.98)***	(-2.18)**	(-4.43)***	
Up market ($R_m > 0$)	0.2531	0.0019	**-0.0013**	-0.0551	0.8090	-0.0005	-1.6475	0.6406
	(1.88)*	(0.13)	**(-2.02)*****	(-1.28)	(2.99)***	(-1.17)	(-3.14)***	
Down market ($R_m < 0$)	0.1965	0.0075	**0.0071**	-0.7531	-0.0245	-0.0005	-79.3609	0.6307
	(3.47)***	(1.67)*	**(1.19)**	(-7.15)***	(-0.80)	(-0.69)	(-5.07)***	
Germany								
Full sample	0.6551	0.0076	**0.0057***	-0.0813	0.4059	-0.0031	0.2954	0.4762
	(4.83)***	(0.77)	**(1.76)**	(-2.28)**	(1.24)	(-0.95)	(0.80)	
Up market ($R_m > 0$)	0.6011	0.0128	**-0.0064**	0.3773	-0.0042	-0.0009	0.1144	0.2296
	(2.76)***	(0.81)	**(-1.62)**	(1.49)	(-0.12)	(-0.26)	(0.31)	
Down market ($R_m < 0$)	-1.014	-0.011	**0.0012**	1.009	-0.182	-0.006	0.730	0.6406
	(-5.23)***	(-1.08)	**(2.14)****	(1.30)	(-3.18)***	(-1.14)	(1.31)	
Sweden								
Full sample	0.1187	0.0273	**-0.0286**	-0.0439	0.3800	-0.0009	-0.2302	0.4932
	(1.47)	(2.68)***	**(-3.32)*****	(-1.26)	(1.66)*	(-2.78)***	(-1.88)*	
Up market ($R_m > 0$)	0.4650	0.0754	**-0.0145**	-0.0567	0.4795	-0.0004	-0.1146	0.6539
	(2.38)**	(6.56)***	**(-1.69)***	(-1.92)*	(3.17)***	(-3.15)***	(-1.58)	
Down market ($R_m < 0$)	0.2182	0.0056	**-0.0109**	0.2628	-0.0109	-0.0001	-0.1891	0.5923
	(1.97)**	(0.74)	**(-2.11)****	(1.04)	(-0.34)	(-2.51)**	(-2.12)**	
UK								
Full sample	0.0687	0.0059	**-0.0011**	0.0715	-0.7998	-0.0027	-9.2183	0.4598
	(0.64)	(2.53)**	**(-2.12)****	(2.59)**	(-5.48)***	(-1.83)*	(-3.13)***	
Up market ($R_m > 0$)	0.0035	0.0173	**-0.0058**	0.0552	-0.5256	-0.0041	-5.3202	0.3870
	(2.03)**	(1.76)*	**(-2.64)****	(2.08)**	(-3.26)**	(-3.26)***	(-2.66)***	
Down market ($R_m < 0$)	-0.0889	0.0120	**-0.0061**	0.0262	-0.7940	-0.0020	-15.7061	0.4062
	(-0.69)	(0.90)	**(-0.61)**	(0.55)	(-3.76)***	(-3.44)***	(-3.26)***	

Table 6.2: Continued

Country	β_1	β_2	β_3	δ_1	δ_2	δ_3	ω	Adj. R^2
Panel B: Control Sample								
Czech Republic								
Full sample	-0.0119	0.1893	**-0.0078**	-0.0026	0.0041	0.0033	-0.2020	0.3122
	(-0.60)	(14.28)***	**(-1.39)**	(-0.77)	(0.15)	(0.16)	(-0.12)	
Up market ($R_m > 0$)	0.7382	-0.0133	**0.0127**	-0.0023	-0.0218	0.0144	0.0385	0.2701
	(6.15)***	(-0.40)	**(1.20)**	(-0.73)	(-1.28)	(-1.29)	(0.52)	
Down market ($R_m < 0$)	0.5154	0.0773	**-0.0772**	-0.0014	0.0052	0.2200	0.0132	0.3011
	(3.94)***	(1.22)	**(-1.05)**	(-0.43)	(0.26)	(0.17)	(-0.25)	
Hungary								
Full sample	0.0277	0.0470	**-0.0159**	0.0007	0.1665	-0.0511	0.0105	0.6667
	(0.77)	(9.05)***	**(-2.10)****	(0.02)	(0.73)	(-0.64)	(1.17)	
Up market ($R_m > 0$)	0.3754	0.0352	**-0.0132**	0.0196	0.1164	-0.0661	-0.0253	0.5509
	(2.06)**	(2.51)**	**(-1.72)***	(0.70)	(0.60)	(-0.04)	(-0.04)	
Down market ($R_m < 0$)	-0.5064	0.0089	**0.0011**	-0.0149	0.3009	0.0331	-0.0010	0.5476
	(-3.07)***	(0.81)	**(0.13)**	(-0.34)	(0.85)	(0.40)	(-1.97)**	
Poland								
Full sample	0.0229	0.2032	**-0.0134**	0.0113	-0.0303	0.0981	-0.3404	0. 7204
	(0.81)	(9.73)***	**(-2.21)****	(1.19)	(-0.90)	(-1.01)	(-0.78)	
Up market ($R_m > 0$)	0.4934	0.0732	**-0.2493**	0.0248	-0.0626	0.0704	-0.6609	0.7242
	(0.85)	(0.39)	**(-1.59)**	(1.05)	(-1.10)	(-0.96)	(-0.96)	
Down market ($R_m < 0$)	0.5724	0.0414	**-0.0667**	0.0017	-0.0091	0.0346	-0.0572	0.8873
	(9.44)***	(2.92)***	**(-4.97)*****	(1.06)	(-1.36)	(-0.67)	(-0.50)	

Note: This table reports regression estimates for equation (6):$CSAD_t=\propto+\beta_1|R_{m,t}|+\beta_2 R^2_{m,t}+\beta_3 IFRSR^2_{m,t}+\delta Macroinf_t+\omega LogGDP_t+\varepsilon_t$. Where IFRS denotes a dummy variable designed to capture investors' herding behavior around mandatory IFRS adoption. The dummy variable takes the value of unity for the post-adoption period (2005-2016), and zero otherwise. A negative and statistically significant coefficient of the dummy variable (β_3) will suggest that mandatory adoption of IFRS has significantly contributed towards the observed herding practice.

Learning from the empirical estimates, the researcher discovers that except for Germany in Panel A (main sample) of Table 6.2, the coefficient of primary interest (β_3) is consistently negative and statistically significant in all the markets based on the market-wide analysis. This suggests that mandatory IFRS adoption has significantly encouraged investors' herding activity in the EU equity markets. Similarly, Panel B (control sample) of the same table indicates that only Hungarian and Polish markets provide supportive evidence of IFRS induced herding, as the coefficient of interest is negative and statistically significant. However, no such effect is found in the case of the Czech Republic. The coefficient on the control variables; change in money supply (δ_1), changes in interest rate (δ_2), consumer confidence (δ_3), and the level of capital market development (ω) mostly suggests no effect, except for changes in interest rates (δ_2) in France and Sweden and money supply (δ_1) in the UK. Taken together, the findings of these analyses suggest that the mandatory IFRS adoption in the EU appears to increase the intensity of investors' herding practice.

Moreover, given that most of the control variables are consistently insignificant, the researcher excluded the control variables from the model (equation 6) and reran the regression again, but that did not materially alter the results. This reaffirms the finding that mandatory IFRS adoption seems to contribute towards the observed herding practice in the EU equity markets, even after controlling for country's important macroeconomic information.

Although these findings appear to contradict the likely expectations and are not in sync with the findings in numerous earlier studies that examine the economic consequences of IFRS adoption, they do not, however, rule out the fact that the new reporting regime might have unintended consequences of increasing certain market anomalies. This is evident in some prior empirical studies for instance; Ahmed et al. (2013) find that the

expectation that IFRS will improve firms' accounting quality turns out to do the opposite in many European developed markets. The study finds that companies complying with IFRS reporting requirements demonstrate a significant increase in earnings management and aggressive reporting of accruals and a considerable decrease in timely loss recognition.

6.3.2 Estimating the effect of financial market regulatory infrastructure on investors' herding practice (H2)

The hope behind the recent EU's securities regulatory changes is to reduce information asymmetry, mitigate uncertainties and boost investors' confidence, which in turn would reduce investors' irrational exuberance and behavioral anomalies (Grosse, 2017; Helleiner, Pagliari, & Zimmermann, 2010). Accordingly, Blasco et al. (2017) argue that effective regulatory quality and efficient enforcement mechanism will boost the confidence of investors in the market, which will lead to greater participation of informed investors. An increased proportion of informed investors will encourage fundamental based trading and mitigate irrational investment behavior like herding. Thus, this study hypothesizes that:

Hypothesis 2: There is a positive relationship between financial market regulatory changes and investors' herding practice in the equity market.

Table 6.3 below presents the regression estimate for equation (7), which aims at testing the study's second hypothesis (H2). The coefficient of primary interest in this model is that of FINREG (β_3). As in the case of IFRS, a negative and statistically significant coefficient of FINREG (β_3) will suggest that the changes in financial market regulatory directives promote investors' herding practice in the EU's equity markets, while a positive and statistically significant coefficient of (β_3) suggests otherwise.

Table 6.3: Testing the Effect of Financial Market Regulatory Changes on Investors' Herding Practice

Country	β_1	β_2	β_3	δ_2	δ_2	δ_3	ω	Adj. R^2
Panel A: Main Sample								
France								
Full sample	0.0094***	1.0241**	**-0.0092**	0.0219	0.5809	-0.3019**	-0.4813	0.4953
	(11.41)	(3.79)	**(-2.78)*****	(1.68)*	(2.51)***	(-2.40)	(-6.04)***	
Up market ($R_m > 0$)	0.2519***	0.0050**	**-0.0048**	0.7948	0.0531	0.0040	-1.6354	0.4239
	(16.98)	(2.36)	**(-2.67)*****	(2.88)***	(1.23)	(4.12)***	(-3.16)***	
Down market ($R_m < 0$)	0.2247***	0.0095***	**-0.0062**	0.6884	0.0206	0.0052	-0.5428	0.6234
	(3.55)	(3.23)	**(-1.29)**	(6.15)	(1.66)*	(4.76)***	(-4.79)***	
Germany								
Full sample	0.6697***	0.0128	**0.0082****	0.068**	0.4606	-0.0249	0.6308	0.4755
	(5.18)	(1.23)	**(2.17)**	(1.97)	(1.44)	(-1.23)	(1.57)	
Up market ($R_m > 0$)	0.5917	-0.0063	**-0.0013**	0.3627	-0.0030	-0.0013	0.1821	0.2280
	(2.82)***	(-0.33)	**(-1.11)**	(1.41)	(-0.08)	(-0.37)	(0.48)	
Down market ($R_m < 0$)	-0.9960	-0.0062**	**-0.0028**	0.9846	-0.1786	-0.0061	0.7710	0.6412
	(-5.23)***	(-2.46)	**(-1.57)**	(2.17)	(-3.08)***	(-1.20)	(1.42)	
Sweden								
Full sample	0.1782**	0.0433***	**-0.0392**	-0.0444	0.2583	-0.0078	-0.1318	0.5011
	(2.07)	(3.08)	**(-2.38)****	(-1.33)	(1.11)	(-3.09)***	(-1.71)*	
Up market ($R_m > 0$)	0.3140**	0.0927	**-0.0308**	-0.0712	-0.3577	-0.0321	-0.0770	0.6864
	(2.36)	(8.14)	**(-1.81)***	(-2.70)	(-2.06)***	(-3.50)***	(-1.24)	
Down market ($R_m < 0$)	0.2418	0.0140	**-0.0130**	0.2230	-0.0110	-0.0111	-0.1835	0.4462
	(2.29)**	(1.15)	**(-1.15)**	(0.89)	(-0.35)	(-2.62)**	(-2.06)**	
UK								
Full sample	0.0205***	0.0182*	**-0.0063**	-0.0950	0.0169*	0.0021	-0.4869	0.4219
	(3.25)	(1.78)	**(-2.94)*****	(-3.71)	(1.69)	(6.26)***	(-0.17)	
Up market ($R_m > 0$)	0.7992***	0.3111***	**-0.5046**	-0.0594	0.4559	0.0022	-4.6210	0.2302
	(3.09)	(3.32)	**(-3.23)*****	(-0.55)	(1.49)	(3.45)***	(-3.20)***	
Down market ($R_m < 0$)	0.1559***	-0.0883	**0.0334**	-0.0262	0.7708	0.0045	0.2841	0.4050
	(2.71)	(-0.16)	**(0.17)**	(-2.25)	(1.72)*	(2.04)**	(1.55)	

Table 6.3: Continued

Panel B	β_1	β_2	β_3	δ_1	δ_2	δ_3	ω	Adj. R^2
Panel B: Control Sample								
Czech Republic								
	-0.0079	0.1683	**-0.0351**	-0.0022	0.0054	0.0061	-0.0313	
Full sample	(-0.37)	(7.11)***	**(-1.56)**	(-0.68	(0.21)	(0.36)	(-0.35)	0.6528
	0.7382	-0.0168	**0.0289**	-0.0039	-0.0435	0.0114	0.0644	
Up market ($R_m > 0$)	(6.16)***	(-0.49)	**(1.63)**	(-1.03)	(-1.52)	(-1.43)	(1.17)	0.4450
	-0.5014	0.0892	**0.0952**	-0.0019	0.0022	0.0033	0.0005	
Down market ($R_m < 0$)	(-3.10)***	(1.10)	**(1.17)**	(-0.62)	(0.09)	(0.06)	(-0.50)	0.6576
Hungary								
	-0.0102	0.0834	**-0.0300**	-0.0021	0.0852	0.0011	0.0064	
Full sample	(-0.27)	(5.70)***	**(-1.27)**	(-0.07)	(0.37)	(0.11)	(1.02)	0.3276
	0.4127	0.0223	-0.0023	0.0110	0.0313	0.0001	-0.0004	
Up market ($R_m > 0$)	(2.03)**	(0.88)	(-1.56)	(0.46)	(0.19)	(-0.09)	(-1.20)	0.54529
	-0.7381	-0.0587	**-0.0332**	-0.0087	0.1913	0.2110	0.0013	
Down market ($R_m < 0$)	(-2.55)**	(-1.08)	**(-1.63)**	(-0.21)	(0.51)	(0.18)	(2.47)***	0.2211
Poland								
	0.0210	0.2792	**-0.0955**	-0.0304	0.0112	0.0016	-0.3440	
Full sample	(0.75)	(3.03)***	**(-1.82)***	(-0.99)	(1.27)	(-1.05)	(-0.88)	0.4204
	0.1542	0.2021	**-0.0633**	-0.0460	0.0235	-0.0210	-0.3994	
Up market ($R_m > 0$)	(0.21)	(0.84)	**(-1.02)**	(-0.95)	(1.02)	(-0.86)	(-0.69)	0.3156
	-0.4912	0.3231	**-0.3272**	-0.0090	0.0003	0.0012	-0.0632	
Down market ($R_m < 0$)	(-8.88)***	(4.89)***	**(-4.24)*****	(-1.32)	(0.19)	(-0.57)	(-0.57)	0.2924

Note: This table reports regression estimates for equation 6): $CSAD_t = \propto + \beta_1 |R_{m,t}| + \beta_2 R^2_{m,t} + \beta_3 FINREGR^2_{m,t} + \delta_1 Macrov_{Control} + \omega LogGDP_{Control} + \varepsilon_t$. Where FINREG denotes financial market regulation designed to capture the effect of financial market regulatory directives on investors' herding practice. A negative and statistically significant coefficient of the dummy variable (β_3) will suggest the financial market regulation has significantly contributed towards the observed herding practice.

Thus, drawing on the regression estimates, the results appear slightly different from that reported in the case of IFRS. More specifically, in Panel A of Table 6.3, the findings indicate that the herding indicator (β_3) is significantly negative in three of the major sample markets (France, Sweden, and the UK) and positive in the case of Germany. The results for the full sample period, for example, reports that France has β_3 = **-0.0092** and the t-stat = **-2.78**, Germany β_3 = **0.0082** and t-stat =**1.17**, Sweden β_3 = **-0.0297** and the t-stat= **-2.38**, and UK β_3 = **-0.0063** and the t-stat= **-2.94**. In Panel B of the table, the three emerging markets (control sample), only Poland appears to show evidence of herding induced by the new financial market regulatory infrastructure. The implication of these findings is that the changes in financial market regulatory infrastructure are also to some extent, another promoting factor of the observed herding practice, particularly in France, Sweden, the UK, and Poland.

6.3.3 The Combined Effects of IFRS and Financial Market Regulatory Changes

In addition to testing the effect of IFRS adoption and changes in financial market regulatory infrastructure discretely, this study further estimates the combined effects by incorporating the two regulatory changes in a single model. Table 6.4 below reports the regression estimates (equation 8) for this combined analysis. The coefficient of interest here is that of (β_3) and (β_4) for IFRS adoption and financial market regulatory infrastructure respectively.

Table 6.4: The Combined Effects of IFRS and Financial Market Regulatory Changes on Investors' Herding Practice

Country	β_1	β_2	β_3	β_4	δ_1	δ_2	δ_3	ω	Adj. R^2
Panel A: Main Sample									
	0.4727***	0.4115*	**-0.0645****	**-0.0498***	0.9008**	0.3482	-0.3751*	-0.3148**	
France	(5.34)	(1.70)	**(-2.27)**	**(-1.67)**	(2.14)	(1.48)	(-1.97)	(-1.97)	0.4756
	0.3676**	0.2078***	**0.0273****	**0.0148****	0.7133***	0.3677	-0.3748	-0.4412**	
Germany	(2.63)	(3.58)	**(1.99)**	**(2.49)**	(2.96)	(0.68)	(-1.06)	(-2.41)	0.3419
	0.3552*	0.6359***	**-0.0122****	**-0.0341***	0.3842	0.2001*	-0.0506	0.1505	
Sweden	(1.86)	(10.80)	**(-2.94)**	**(-1.66)**	(1.16)	(1.65)	(-1.78)*	(0.53)	0.3179
	0.2515***	0.4456***	**-0.0305*****	**-0.0144****	0.2638*	0.0496	-0.0467	0.2014*	
UK	(3.69)	(11.83)	**(-3.38)**	**(-2.13)**	(1.65)	(1.25)	(-1.43)	(1.79)	0.4467
Panel B: Control Sample									
	0.3954***	0.2885***	**-0.0400**	**-0.0858**	0.1011	-0.2854	-0.5996*	-0.2179**	
Czech	(9.18)	(17.22)	**(-1.12)**	**(-1.56)**	(1.22)	(-1.23)	(-1.71)	(-2.40)	0.5827
	0.6168***	0.2158***	**-0.0045****	**-0.0675***	0.0272*	-0.2973*	-0.0143**	0.2110	
Hungary	(3.07)	(11.34)	**(-1.99)**	**(-1.65)**	(1.71)	(-1.84)	(-2.12)	(0.83)	0.4129
	0.3564***	0.1873***	**-0.0418****	**-0.0065***	-0.2427***	-0.6859	0.6334	-0.3370	
Poland	(4.17)	(5.22)	**(-2.41)**	**(-1.78)**	(-3.87)	(-1.52)	(1.29)	(-1.33)	0.3733

As indicated in Table 6.4 above, this combined investigation yields some important empirical outcomes. It is observed that the three major sample markets France, Sweden, and the UK provide evidence suggesting that mandatory IFRS adoption and the changes in financial market regulatory infrastructure have an incremental combined effect on the observed herding practice. However, in the case of Germany, no herding is found. This further reinforces the earlier findings for France, Sweden, and the UK that each of the two financial regulatory changes has contributed to the observed herding practice in their respective equity markets. The second useful insight observed in this combined analysis is that; although the researcher observed evidence of herding in the Czech Republic based on original CCK model, none of the two financial regulatory changes under consideration seems to have induced this herding practice. Overall, this study concludes that the two significant financial regulatory changes have a combined effect of promoting investors' herding practice in all the EU equity markets.

While we cannot rule out that fact that changes in financial regulations may have unintended consequences of increasing certain market anomalies, the researcher, however, is particularly curious as to why quality-reporting regime like IFRS and reform of financial market regulations designed to reduce information asymmetry would instigate investors' herding behavior. Moreover, despite the mixed findings documented in the extant literature regarding the economic effect of financial regulatory changes, a substantial part of this literature points to the direction of positive economic benefit on the capital market, with some positive real economic consequences. Similarly, given the settings of the main sample markets in this study and considering the explanations put forth by most of the behavioral finance scholars as to why herding exists in the financial

market[4], the researcher therefore expects herding activity to be more prevalent in emerging not developed equity markets where information asymmetry is likely to be stronger.

This curiosity compelled the researcher to subject these findings to further analysis in order to avoid misleading interpretation. The justification for this additional analysis stems from the fact that some behavioral finance scholars have cautioned against ascribing the investors' herding behavior as always intentional (Gavriilidis, Kallinterakis, & Ferreira, 2013). Hachicha (2010) argues that measuring herding empirically has so far proved challenging. Also, in some particular contexts or experimental settings, it is difficult to isolate imitative behavior from clustering of trades. In a similar vein, Kremer and Nautz (2013) also contend that herding activity might sometimes be unintentional and partly driven by the use of similar risk models. In that, it is possible for investors to trade in a contemporaneous manner without necessarily imitating the actions of others but due to an identical reaction to common fundamental information (Zhou & Lai, 2009). This form of clustering according to Galariotis et al. (2015) is referred to as spurious herding. Bikhchandani and Sharma (2000) distinguish between "spurious herding" where investors trade in the same direction by simply reacting to changes in fundamentals and "intentional herding" where less sophisticated investors, due to uncertainty, blindly mimic the action of victorious market investors. The former often leads to an efficient outcome and lends support to the EMH, which the EU financial regulatory changes are expected to promote, while the latter does the contrary, leading to fragile markets, excessive

[4] Lack of corporate transparency, less publicly available information, lax regulatory infrastructure, and weak accounting standards (Bikhchandani & Sharma, 2000; Duasa & Kassim, 2009; Guney et al., 2017; Yao et al., 2014).

volatility, and systemic risk, which the EU financial regulatory changes are expected to mitigate.

With this in mind, the researcher conducts the following additional analysis in order to disentangle whether the observed evidence of herding around the financial regulatory changes is intentional or spurious.

Following Galariotis, et al. (2015) and Galariotis, et al. (2016), this study decomposes the CSAD measure into deviation due to identical reaction to common fundamental information and deviation due to non-fundamental information. In this way, the researcher will be able to test if the observed herding practice around financial regulatory changes is intentional or spurious. To do this, the study considers the return factors put forward by Fama and French (1995) and Carhart (1997) [5]. These factors are deemed sufficient to capture important fundamental information that may affect investors' decision-making processes on the market wide level (Galariotis et al., 2015; Galariotis et al., 2016). The researcher then estimates the following regression as per equation (11) below:

$$CSAD_t = \propto + \gamma_1(R_{m,t} - R_f) + \gamma_2 HML_t + \gamma_3 SMB_t + \gamma_4 MOM_t + \varepsilon_t \qquad (11)$$

In equation (11) R_f is the risk-free rate, HML is the High Minus Low return factor, SMB is the Small Minus Big return factor, and MOM is the Momentum factor. Galariotis et al. (2016) argue that since both the CSAD and these risk factors are in return form, the

[5] To calculate the factors we first need to sort the companies based on market capitalization (size) with the smallest 50 percent and largest 50 percent of stocks assigned to two different groups, namely, S and B, for Small and Big, respectively. Independent of the size sort, we then need to sort the companies by book-to-market ratio with the smallest 30 percent, the middle 40 percent and the largest 30 percent assigned to three different groups, namely, L, M, H, for Low, Middle and High, respectively. The intersection of the two size-groups and three book-to-market groups produces six groups of stocks, which are used to compute the Small minus Big (SMB) and High minus Low (HML) returns. (See Galariotis, Rong, et al., 2015; Panta, Phuyal, Sharma, & Vora, 2016).

residuals from equation (11) could be considered to be the CSAD having the effect of fundamental information removed. In other words, the term can be regarded as a measure of clustering due to investors reacting to non-fundamental information (Galariotis et al., 2016). The researcher then labels this term as $\mathrm{CSAD_{Nonfund}}$: $\mathrm{CSAD_{Nonfund,t}} = \varepsilon_t$.

Hence, the difference between the total $\mathrm{CSAD_t}$ and the $\mathrm{CSAD_{Nonfund,t}}$ is considered as deviation owing to investor's reaction to fundamentals information. The researcher then labels this deviation as $\mathrm{CSAD_{Fund}}$ which is presented in equation (12) below

$$\mathrm{CSAD_{Fund}} = \mathrm{CASD_t} - \mathrm{CASD_{Nonfund}} \quad (12)$$

Finally, the study estimates a regression similar to equation (3) but with each of the above defined CSAD measures as dependent variables as per equation (13) below:

$$\mathrm{CSAD_{Fund}} = \propto + \gamma_1|\mathrm{R_{m,t}}| + \gamma_2 \mathrm{R^2_{m,t}} + \varepsilon_t \quad (13)$$

$$\mathrm{CSAD_{Nonfund}} = \propto + \gamma_1|\mathrm{R_{m,t}}| + \gamma_2 \mathrm{R^2_{m,t}} + \varepsilon_t \quad (14)$$

The above-decomposed regression models equation (13) and (14) are estimated for all the sample markets and the full sample period. The findings are reported in Table 6.5 below. Panel A of this table presents the evidence of herding arising from fundamental based trading (spurious herding), whereas Panel B presents herd formation due to investors' tendency to abandon their prior heterogeneous information and blinding follow the action of other investors (usually sophisticated investors) in their trading pattern. Recall that the coefficients of the square market return (γ_2) in equation (13) and (14) should be negative and statistically significant if herding behavior is present.

Table 6.5: Regression Estimate of Intentional and Spurious Herding

Countries	α	β_1	β_2	Adj. R^2
Panel A: Fundamental driven herding				
Czech Republic	1.2346 (35.83)***	0.1156 (2.20)**	0.0469 (2.74)**	0.3138
France	5.1721 (51.62)***	0.0296 (1.65)*	-0.0047 (-2.60)**	0.3267
Germany	7.4712 (18.45)***	0.1378 (1.09)	-0.0001 (-1.73)*	0.2920
Hungary	8.2891 (141.23)***	0.0474 (2.37)**	-0.0029 (-1.90)*	0.5419
Poland	1.0364 (64.45)***	0.0280 (3.34)***	-0.0048 (-2.84)***	0.4176
Sweden	5.3653 (69.18)***	0.1468 (6.32)***	-0.0021 (-2.59)**	0.6777
UK	4.6927 (92.79)***	0.2077 (17.25)***	-0.0006 (-3.37)***	0.8261
Panel B: Non-Fundamental driven herding				
Czech Republic	0.8807 (15.06)***	0.8799 (10.95)***	-0.0526 (-2.23)**	0.8026
France	1.3376 (15.94)***	0.3525 (4.56)***	0.0054 (1.70)*	0.2547
Germany	0.9629 (11.66)*	0.2722 (1.36)	-0.0080 (-1.01)	0.2160
Hungary	2.7431 (16.27)***	0.1969 (1.91)*	-0.0429 (-2.55)**	0.3561
Poland	0.4036 (12.51)**	0.4129 (2.18)**	0.0686 (1.59)	0.3880
Sweden	0.9973 (22.37)**	0.2972 (2.00)**	-0.0089 (-1.17)	0.4617
UK	0.0256 (26.09)**	0.0404 (2.39)**	0.0048 (1.49)	0.4144

Notes: The Table presents results from the regressions: $CSAD_{Fund} = \propto + \gamma_1|R_{m,t}| + \gamma_2 R^2_{m,t} + \varepsilon_t$ (13) and $CSAD_{Nonfund} = \propto + \gamma_1|R_{m,t}| + \gamma_2 R^2_{m,t} + \varepsilon_t$ (14). $CSAD_{Nonfund,t} = \varepsilon_t$ from $CSAD_t = \propto + \gamma_1(R_{m,t} - R_f) + \gamma_2 HML_t + \gamma_3 SMB_t + \gamma_4 MOM_t + \varepsilon_t$ (11). $CSAD_{Fund} = CASD_t - CASD_{Nonfund}$ (12)

The findings of this additional analysis provide a fascinating insight. It is noted that the coefficient of the nonlinear term in Panel A of the table is consistently negative and

statistically significant across the sample markets (control sample inclusive). These findings suggest that there exists substantial evidence of fundamentally driven herding in all the sample markets around financial regulatory changes. These results do not hold when testing for evidence of non-fundamental driven herding. Specifically, except the Czech Republic and Hungary in Panel B of the table, the evidence suggests that there exists no evidence of intentional herding behavior around the two financial regulatory changes in the sample markets. However, the evidence of intentional herding observed in the Czech Republic, and Hungary may not be unconnected to the relatively small size of the markets, their relative inefficiency, and less fraction of sophisticated investors, among others. This is consistent with the findings from prior studies which indicate that the propensity of investors to engage in intentional herding is likely to be prevalent in emerging markets relative to developed markets given their relative opaque information environment, less informed investors, and high information acquisition costs (Bikhchandani & Sharma, 2000; Prosad et al., 2012).

Overall, the results of this further analysis imply that without ruling out other differences, it appears that the observed herding practice documented earlier in this study is mainly non-intentional but spurious, which we can firmly attribute to the improvement in information environment emanating from mandatory IFRS adoption and strengthening of financial market regulatory infrastructure in the EU jurisdiction. In other words, the idea that financial regulatory changes enhance the information environment, promote trading based on fundamental variables has been validated by the present empirical findings.

Therefore, based on the empirical findings of the present study, the researcher concludes that there is a definite relationship between the EU reporting and financial regulatory directives on investors' herding propensity in the EU equity markets. Hence the study's H1 and H2 are hereby confirmed.

Table 6.6: Summary of Herding Estimates

	Czech Republic	France	Germany	Hungary	Poland	Sweden	UK
Bench mark model							
Herding- Full sample	Yes	No	No	No	Yes	No	Yes
Herding- Up market	Yes	Yes	No	No	No	Yes	No
herding- Down-market	No	No	No	Yes	Yes	Yes	Yes
IFRS-induced herding							
Herding- Full sample	No	Yes	No	Yes	Yes	Yes	Yes
Herding- Up market	No	Yes	No	Yes	No	Yes	Yes
herding- Down-market	No	No	No	No	Yes	Yes	No
Market regulation induced herding							
Herding- Full sample	No	Yes	No	No	Yes	Yes	Yes
Herding- Up market	No	Yes	No	No	Yes	No	Yes
herding- Down-market	No	No	No	No	Yes	No	No
Combined effects							
Herding Full sample	No	Yes	No	Yes	Yes	Yes	Yes
Fundamental and Non Fundamental herding							
Spurious herding	No	Yes	Yes	Yes	Yes	Yes	Yes
Intentional herding	Yes	No	No	Yes	No	No	No

6.4 Phase Three: The Moderating Role of National Economic Culture (H3)

Having established that financial regulatory changes promote information-based trading as observed by the presence of spurious herding, this study then proceeds to test the role played by a country's environmental factor on the observed herding effect. The motivation for this test arises from the fact that scholarly evidence suggests that the economic and informational effect of these regulatory changes is likely to be heterogeneous due to varying institutional and cultural characteristics across countries. In

this regard, Arshad Ali, Akbar, Ormrod, and Shah (2016) suggest that it is vital to consider the fundamental elements of culture when studying one size fits all regulatory regime. Against this backdrop, it would make an intuitive sense to assume that the differences in societies' value systems are likely to affect the effect of financial regulatory changes on investors' herding practice. Hence, the study hypothesizes that:

Hypothesis 3: National economic culture moderates the effect of financial regulatory changes on investors' herding practice.

Table 6.7 presents the regression results of the role of national economic culture on the observed herding effect. The table is divided into two parts; Panel A and Panel B. On one hand, Panel A reports the role played by national economic culture on the effect of IFRS adoption on investors' herding propensity. Panel B, on the other hand, reports the role of national economic culture on the effect of financial market regulatory changes on investors' herding propensity.

Table 6.7: The Role of National Economic Culture of The Effect of Financial Regulations

Coefficient		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Panel A: The Role of Culture On Effect of IFRS adoption On Herding.							
	ϑ_0	1.322 (2.41)**	0.425 (0.41)	2.703 (2.61)**	0.648**(2.08)	2.511** (2.45)	-0.538 (-0.43)
Power Distance (PD)	ϑ_1	0.003 (1.16)					-0.714 (-0.59)
Individualism (IND)	ϑ_2		**0.026*** (5.35)**				**0.168***(5.65)**
Uncertainty Avoidance (UA)	ϑ_3			-0.027** (2.07)			-0.125(-1.42)
Masculinity (MAS)	ϑ_4				-0.019***(2.79)		**0.006** (2.58)**
Long Term Orientation (LTO)	ϑ_5					-0.156**(-2.60)	0.015 (0.52)
Pseudo R^2		0.0022	0.126	0.059	0.023	0.013	0.371
X^2		0.334	5.73***	2.89**	2.11**	5.13***	73.14***
Panel B: The Role of Culture On The Effect of Financial Market Regulatory Changes on herding							
	ϑ_0	0.344***(3.54)	0.272 (0.91)	0.2032 (0.71)	0.326***(3.48)	0.302*** (2.85)	-0.538 (-0.23)
Power Distance (PD)	ϑ_1	-0.004(-0.46)					0.445 (0.41)
Individualism (IND)	ϑ_2		**0.015 **(2.48)**				**0.355** (2.39)**
Uncertainty Avoidance (UA)	ϑ_3			-0.014 (-1.61)			-0.387* (-1.98)
Masculinity (MAS)	ϑ_4				-0.007 (-1.45)		-0.0398 (-0.68)
Long Term Orientation (LTO)	ϑ_5					-0.056 (-0.60)	0.015 (0.52)
Pseudo R^2		0.000	0.026	0.139	0.013	0.016	0.371
X^2		0.20	6.73**	1.89	2.11	5.33**	1 3.14***

This table reports the regression results in $D\beta_{i,5}=\vartheta_0 + \vartheta_1 PD_i + \vartheta_2 IND_i + \vartheta_3 UA_i + \vartheta_4 MAS_i + \vartheta_5 LTO_i + +\varepsilon_i$ (9). Note: If the coefficient of the national cultural factors ($\vartheta_1, \vartheta_2, \vartheta_3, \vartheta_4,$ or ϑ_5) is statistically and significantly different from zero (equation 9), it implies that national cultural factors significantly influence on the effect of regulatory changes on investors' herding practice.

Recall that, if the coefficient of national cultural factors (ϑ_1, ϑ_2, ϑ_3, ϑ_4, or ϑ_5) is statistically and significantly different from zero (equation7), it implies that national cultural factor influences the observed herding practice. Therefore, learning from the regression estimates as presented in Panel A of Table 6.5, a simple logistic regression analysis Model (1-5) reveals that the coefficient of individualism (ϑ_2) is positive and statistically significant, suggesting that the observed spurious herding activity around IFRS adoption is not only induced by the IFRS regime but also, to some extent, by the differences in national economic culture, particularly, the degree of individualism. Moreover, the result in multinomial logistic regression analysis Model 6 in Panel A, shows that the coefficients of individualism (ϑ_2) and masculinity (ϑ_4) are statistically different from zero, reaffirming the earlier finding that IFRS adoption is not the only instigator of the observed information-based herding, but cultural values, in this case, the degree of individualism plus masculinity have also played a significant role in the observed herd formation. Consequently, drawing on the regression estimates in panel B (see Table 6.5), the results show that the effect of financial market regulatory changes on investors herding tendency is also partially influenced by country' national cultural orientation, particularly the degree of individualism. Specifically, both the simple and multinomial logistics regression analyses report these findings.

Taken together, therefore, the findings partially support the theoretical postulation that national economic culture is an important attribute in influencing the economic and informational consequences of financial regulatory changes (Clements et al., 2010; Houqe et al., 2016; Karaibrahimoglu & Cangarli, 2016; Nurunnabi, 2015; Tsakumis, 2007). More specifically, the findings suggest that investors in the EU countries characterized by high level of individualism and high level of masculinity tend to engage in spurious herding around the new regulatory regime. The plausible explanation for this findings is that; a country with high individualistic cultural trait tends to allow the investor

to have an irrefutable right to live as he/she deems fit, to act based on his/her judgment, and to use information, as he /she understands it. In this society, individual opinion is supreme as against collective opinions. This, therefore, allows the investor to use his/her prior heterogeneous information signals to arrive at defendable investment decisions instead of following the market consensus.

Furthermore, spurious herding around the EU's regulatory changes also appears to be influenced by a country's degree of masculinity. High masculinity index suggests that male investors tend to be assertive, tough, and focused on material success, while their female counterpart tends to be modest, tender, and concerned with the quality of life. Therefore, the assertiveness and egocentric attitude of investors in this kind of society will make them use their market information signal instead of mimicking the actions of others in their investment decisions. Consistent with this finding, Karaibrahimoglu and Cangarli (2016) provide evidence suggesting that national economic culture has a significant influence on auditing and reporting benchmark. Their results reveal that the perceived quality of auditing and reporting standards on the perceived firm ethical behavior is accentuated when a society is characterized by high uncertainty avoidance, institutional collectivism, future orientation, and low in-group collectivism and power distance. Ugrin et al. (2017) also find that national economic culture affects the level of earnings management in a society with high individualistic, uncertainty avoidant, short-term oriented and indulgent culture.

Thus, based on present empirical evidence, the study's third hypothesis (H3) is hereby partially accepted.

6.5 Robustness Checks

To check the robustness of the study's findings, the researcher employs a different herd-detection approach that uses a generalized form of the CCK model. Following Yao

et al. (2014), instead of using the CSAD measure, the researcher uses CH's CSSD estimate, which does not rely on the estimation of the CAPM/beta as presented in equation (15) as follows:

$$CSSD_t = \gamma_0 + \gamma_1|R_{m,t}| + \gamma_2(R_{m,t})^2 + \varepsilon \quad (15)$$

Where a significantly negative coefficient of the square market returns ($R_{m,t}$) will imply the presence of herding behavior. Although CCK's model is presumed to have a strong theoretical basis, Yao et al. (2014) argue that the model has potential shortcomings, triggered by a high level of multicollinearity between the two explanatory variables in the equation: $R_{m,t}$ and $(R_{m,t})$. Thus, to address this concern, the authors suggest the inclusion of an extra term to the second explanatory variable in the benchmark model, as per equation (16) as follows:

$$CSSD_t = \gamma_0 + \gamma_1|R_{m,t}| + \gamma_2(R_{m,t} - R_m)^2 + \varepsilon \quad (16)$$

Where R_m is the arithmetic mean of $R_{m,t}$. The inclusion of this extra term is expected to overcome, to a large extent, the problem of multicollinearity between the explanatory variables in the equation, and consequently, increase the strength of the model. This study, therefore, tests this assertion by first regressing equation (16) for the entire sample period. Appendix A reports the estimates for this modified model. The results, by and large, appear consistent with the earlier findings reported in Table 6.1. Specifically, consistent with those reported in Table 6.1, the results in Appendix A shows that with the exception of Germany whose coefficient on the non-linear term appears ambiguous; indicate significant evidence of herding during different market conditions based on the market-wide analysis.

Furthermore, to confirm whether the EU mandatory IFRS adoption and reform of financial market regulatory infrastructure mitigate or promote investors' herding practice,

the researcher tests the following augmented generalized form of the CCK model as per equation (17), (18) and (19) below:

$$CSSD_t = \gamma_0 + \beta_1|R_{m,t}| + \gamma_2(R_{m,t} - R_m)^2 + \gamma_3 \text{ DUM } (R^2_{m,t}) + \delta Macroinf_t + \omega LogGDP_t + \varepsilon_t \quad (17).$$

$$CSSD_t = \gamma_0 + \beta_1|R_{m,t}| + \gamma_2(R_{m,t} - R_m)^2 + \gamma_3 FINRE(R^2_{m,t}) + \delta Macroinf_t + \omega LogGDP_t + \varepsilon_t \quad (18)$$

$$CSSD_t = \gamma_0 + \beta_1|R_{m,t}| + \gamma_2(R_{m,t} - R_m)^2 + \gamma_3 \text{ DUM } (R^2_{m,t}) + \gamma_4 FINREG\ (R^2_{m,t}) + \delta Macroinfo_t + \omega LogGDP_t + \varepsilon_t \quad (19)$$

Where DUM represents, a dummy variable is designed to capture investors' herding behavior around mandatory IFRS adoption in equation (17). The dummy variable assumes the value of one for post-IFRS adoption and zero for pre-IFRS. A negative/positive and statistically significant coefficient of the dummy variable indicates that mandatory adoption of IFRS encourages/discourages investors' herding practice. Appendix B presents these regression estimates. The findings in these confirmatory tests are assuring. Although the researcher notices slight variations with corresponding findings (see Table 6.2), the results largely reinforce the researcher's earlier findings that mandating the use of IFRS has significantly promoted investors' herding practice in EU equity markets.

Furthermore, the researcher regressed equation (18) to confirm whether the findings reported in Table 6.3 also hold. Appendix C presents these results, and the findings therein appear consistent in the case of major sample markets: France, Germany, Sweden, and the UK. While they vary in the case of a one control sample market: Czech. Specifically, while Table 6.3 could not establish a significant relationship between financial regulatory changes and investors' herding practice in the Czech Republic, Appendix C reports that this relationship exists when the generalized form of the CCK model modified by Yao et

al. (2014) is used. This suggests that the Yao et al. (2014) generalized form of the CCK model appears to be more sensitive to detecting herding practice around financial regulatory changes.

However, the findings generated from equation (19), (i.e when confirming the the joint impacts of IFRS and financial market regulatory infrastructure on investors' herding behavior) are slightly different but largely reassure the researcher's earlier findings that the two regulatory changes have incremental joint effect on investors' herding practice in EU equity markets (see, Appendix E). Furthermore, given that composite mean for various regulatory and governance indices are used in testing the effect of financial market regulation, to confirm these findings, this study tests this analysis using each index separately to see if the results are affected. By and large, the results generated from this additional confirmatory test appear reinforcing (see Appendix E, F, H, I, and J).

Consequently, given that the data used in the Hofstede cultural scores have been criticized for not being updated for over three decades, this confirmatory analysis uses an updated version of these scores provided by Tang and Koveos (2008) in order to confirm the earlier findings. Although the researcher notices a slight difference, the results seem to be in agreement with what is reported in table 6.4. Specifically, in the confirmatory test, only the degree of individualism is found to be statistically different from zero. This suggests that despite the criticism, the Hofstede cultural scores seem to remain valid in understanding societal value systems across countries.

6.6 Discussion of the Overall Findings

As mentioned in the introductory part of this thesis, the conduct of this study was spurred by the prevalence of investors' herding practice observed in the financial markets. Surprisingly, despite a series of regulatory initiatives (particularly in the EU jurisdiction) designed to mitigate such kind of market anomalies, herding phenomenon appears to

remain inexplicably persistent in both emerging and developed markets. Therefore, this observed incongruity prompted the researcher to investigate what actually constitutes the effect of the recent EU financial regulatory changes on this particular behavioral bias. The question here is whether the new regulatory regime promotes or mitigates investors' herding propensity. This investigation is deemed important given that past research has shown that the propensity of investors to herd is a function of an opaque information environment due to less stringent reporting requirements, lax disclosure practice, weak accounting standards and high information acquisition costs (Bikhchandani & Sharma, 2000; Fernández et al., 2011; Prosad et al., 2012; Zhou & Lai, 2009).

Intuitively, with high-quality reporting benchmark like IFRS as well as effective and efficient financial market regulatory infrastructure, this study assumes that investors' behavioral biases that are by nature informational should be expected to stave off, as the market informational environment would be expected to improve. Thus, understanding the relationship between this new regulatory regime and investors trading behavior is important in and of itself (Hellmann, 2016). This is because effective financial regulations bring high-quality disclosure which in turn attenuates behavioral anomalies of investors, besides promoting information-based trading (Chau et al., 2013; Florou & Pope, 2009; Lambertides & Mazouz, 2013). This argument is rooted in both theory and evidence. The hypothesis that posits high quality and transparent disclosure may have an impact on investors' behavior has been supported in the extant literature. For instance, Leuz and Wysocki (2016) argue that improvement in information quality tends to incentivize desirable investment behaviors and discourage undesirable ones. This is because when investors' behavioral anomalies are by nature informational, the quality of corporate disclosure matters. High-quality reporting regimes like IFRS are expected to mitigate the asymmetries of information ex-ante and enable better control ex-post, thereby reducing the effect of market imperfections (Alexandre & Clavier, 2017).

Interestingly, the results in this study give a number of theoretical and empirical insights. First, taking at face value, the evidence in relation to hypotheses 1 and 2 shows that there is significant evidence of herding behavior induced by financial regulatory changes in most of the sample countries (see table 6.2 and 6.3). However, it is important, at this juncture, to reiterate that this level of analysis does not distinguish which form of herding activity is observed. Because the study employs an approach of herd detection which explores evidence of herding towards the market consensus. The approach does not in any way untangle whether the observed herding phenomenon is intentional or spurious. Therefore, to avoid misleading interpretation, the researcher conducts a further test in order to decompose herding due to informational uncertainties (intentional) and herding driven by a common reaction to fundamental information (spurious). This is done by following prior studies that use return factors put forward by Fama and French (1995) and Carhart (1997) that are deemed sufficient to capture key fundamental information that may affect investors' decision-making processes on the market wide level. This important analysis is in sharp contrast to most prior empirical herding research, where the bulk of the studies in this area have been only interested in identifying whether herding exists or not (e.g. Angela-Maria, Maria, & Miruna, 2015; Balcilar, Demirer, & Hammoudeh, 2014; Blasco et al., 2017; Chang & Lin, 2015; Economou et al., 2016; Guney et al., 2017; Javaira & Hassan, 2015; Klein, 2013; Litimi et al., 2016; Mobarek, Mollah, & Keasey, 2014; Truong & Le, 2014; Vieira & Pereira, 2015; Yao et al., 2014). A very little effort is directed in this respect; if herding is found, to unravel whether the herding phenomenon is intentional or spurious (Hachicha, 2010). In other words, most of the prior empirical studies conducted in this area usually do not test a particular form of herding behavior described in the theoretical literature; instead, they gauge whether clustering of decisions in a purely statistical sense is taking place in financial markets or within certain investor groups.

Meanwhile, the evidence presented by this additional test strongly validates the notion that IFRS adoption and changes in financial market regulatory infrastructure enable investors to have better access to market-moving information, and level the playing field for both sophisticated and less sophisticated investors. The crux of this argument is that when information uncertainty is reduced, and investors' confidence strengthened following increased disclosure and reporting transparency, investors would tend to trade in a similar manner without intentionally copying the actions of others but due to reaction to common fundamental information, hence generating the impression of herding. This form of clustering according to Galariotis, et al. (2015) is referred to as spurious herding. Bikhchandani and Sharma (2000) distinguish between "spurious herding" where investors trade in the same direction by simply reacting to changes in fundamentals and "intentional herding" where investors blindly mimic the action of victorious market investors. The former often leads to an efficient outcome and lends support to EMH, which the new financial regulatory directives are assumed to promote, while the latter does the contrary; leading to fragile markets, excessive volatility and systemic risks, which the new EU directives are expected to mitigate.

More specifically, with regards to IFRS adoption effect (H1), the findings in this study underpin the assumption of signaling theory which makes a number of predictions regarding the information signal. According to the theory, market information affects to a large extent investors'decision-making processes and, by extension, their trading strategies. Investors often make decisions based on the public information signal, which is freely available, and a private information signal, which is available only to a subsection of the public. Thus, in a situation where investors have access to different level of such information signals, "information asymmetries occur"(Stiglitz, 2003). In this regards, Connelly et al., (2011) argue that since certain information is private, asymmetries of information can only say to exist between investors who hold that information and those

who could make better decisions if they had it. However, Stiglitz (2002) shows that this form of information asymmetries arising from private information are typically ignored, as most traditional economic models of decision-making processes are usually based on perfect information assumption.

To this end, drawing on the prediction of the signaling theory, one can infer that an improvement in information environment stemming from the use of IFRS disclosure requirements can be seen as a reliable signal of firms' commitment to transparency and sound financial behavior. The reason being that when firms' financial reports are transparent and reflect the underlying economic reality, it is likely to boost the confidence of investors to rely on firms' fundamental variables to make investment decisions. Further, effective compliance with high-quality reporting benchmark like IFRS would enable firms to signal their readiness to make public their financial performance and managerial ability. This according to Chau et al. (2013) would attract greater participation of sophisticated investors from both domestic and foreign markets. Validating this assertion DeFond et al. (2011) and Florou and Pope (2009) show that the adoption of IFRS in the EU has led to a surge of cross-border investments, particularly from the institutional investors. With institutional investors having been coined as the natural candidates for "rational decision" (Barber & Odean, 2007), an increase in their participation in the market is believed to reduce the level of irrational investment behavior and increase the speed at which new information is assimilated into prices (Chau et al., 2013).

Furthermore, with regards to the second research hypothesis (H2), the findings generated from the additional analysis suggest that the changes in financial market regulatory infrastructure appear to be another incremental factor of the observed spurious herding practice. What this evidence shows is that the tendency of investors to engage in

fundamental-based herding might sometimes be a function of changes in financial market regulatory infrastructure.

A plausible explanation of these findings is that enhancing market information environment via stringent financial regulations might provide investors with much-needed information to make rational investment decisions, thereby enabling the financial market to achieve the desired level of information efficiency. Several theoretical arguments posit that the primary goal of financial regulations is to facilitate the efficient functioning of the financial markets and ensure effective allocation of resources in the economy (Goshen & Parchomovsky, 2005). For example, economic theories such as EMH suggest that financial market is said to be efficient if asset prices reflect fundamental information about firms. Brealey et al. (2012) construe a market as efficient when it is not possible to earn a return higher than the market return. In other words, the value of shares reflects the fair value of the firm and is equal to the future cash flows discounted by an alternative cost of capital. Largely, the findings generated from H2 appear to have supported the two important pillars of market efficiency theory which posit that: 1) in efficient markets, available information is already integrated into the assets prices; 2) in efficient markets, investors cannot earn a risk-weighted excess return (Degutis & Novickytė, 2014).

In addition to the theoretical supports, the findings of this additional analysis also appear in sync with numerous other prior empirical studies examining the economic and informational effect of financial regulatory changes (e.g. Bozanic, Dietrich, & Johnson, 2017; Donald Byard, Ying Li, & Yong Yu, 2011; Chau et al., 2013; Lambert et al., 2006; Lemus, 2016; Leuz & Wysocki, 2016; Lin, Riccardi, & Wang, 2012; La Porta et al., 2006; Prather-Kinsey, Jermakowicz, & Vongphanith, 2008). Although the evidence is in contrast to that reported in Arya et al. (2005) who find the U.S. Reg. FD had an inadvertent consequence of increasing analysts 'herding practice, a much later research

conducted by Ke et al. (2008) provides evidence suggesting that the adoption financial market regulation has reduced the management tendency to engage in selective disclosure behavior, which in turn alters the trading pattern of transient institutions investors. Relatedly, Chau et al. (2013) also find that the mandatory IFRS adoption has significantly reduced investors' noise trading behavior in the EU emerging equity markets.

Consequently, in understanding how financial regulations affect investors' herding practices, the researcher deems it essential to highlight the influence of country-specific factors. This is because recent evidence has shown that ascribing the observed economic effect exclusively to financial regulations, particularly IFRS could lead to misleading interpretations (Gray, Kang, Lin, & Tang, 2015). Because accounting and reporting practices do not operate in a vacuum (Nurunnabi, 2015), but normally influenced by a country's environmental factors (Cieslewicz, 2014; Houqe et al.; Nurunnabi, 2015; Shima, Kim & Gordon, 2011; Shima, Kim & Yang, 2012). Among these factors, national economic culture is construed to have a significant influence on firms' reporting and other financial regulations (Chand et al., 2012; Cieslewicz, 2014; Nurunnabi, 2015). Many studies have also shown that national economic culture is an important element and driver of many observed finance phenomena (Aggarwal et al., 2012; Ahern et al., 2015; Beracha et al., 2014). This is because cultural differences between investors increase, access to information, interpretation of such information, and the overall understanding of the market environment (Beracha et al., 2014). From an economics perspective, for example, culture is deemed to affect financial knowledge and decision making through systematic variation in time or risk preferences (Falk et al., 2018). Whereas from a psychological point of view, culture is argued to influence financial knowledge and decision making through differences in financial socialization or attitudes towards money (Yamauchi and Templer, 1982).

In testing the moderating role of national economic culture, the issue that is evident in this thesis is that; the national economic culture, particularly the degree of individualism and masculinity is found to significantly play a role towards promoting investors' spurious herding practice around the new regulatory regime. Thus, the results presented in testing the third research hypothesis (H3) suggest that the national economic culture is partially an important variable when examining the effects of financial regulations. Nonetheless, this does not suggest that there are no other significant institutional factors or even more significant than culture, but based on the evidence documented in this study there is no support for the contention that national economic culture is totally inconsequential. This evidence can further be buttressed by Scott (2013) who identifies three key pillars of institutional theory to include regulative, normative, and cultural-cognitive pillars. The regulative pillar stresses the significance of regulatory processes, rule-settings, monitoring, and sanctioning activities regarding how institutions work and function. The normative pillar emphasizes social obligation and normative rules towards adopting new structures. The third pillar is the cultural-cognitive, which focuses on the role of cultural-cognitive elements of institutions and the shared values that represent the nature of social reality and how meanings are constructed and created (Scott, 2013).

To this end, based on the empirical findings documented herein all the three major hypotheses put forward in this study are to be upheld. To recapitulate, these hypotheses are:

H1. There is a positive relationship between mandatory IFRS adoption and investors' herding practice in the equity markets.

H2. There is a positive association between financial market regulatory changes and investors' herding practice in the equity market.

H3. National economic culture moderates the effect of financial regulatory changes on investors' herding practice.

6.7 Chapter Summary and Conclusion

This chapter examines the impact of the EU's adoption of IFRS and changes in financial market regulation on investors' herding practice while highlighting the role of national economic culture. The empirical findings as presented in this chapter indicate that the EU's financial regulatory changes have significantly increased investors' spurious herding activity in the equity markets. This suggests that the herding activity observed in the EU equity market is largely driven by an identical reaction to common fundamental information. However, the additional analysis further suggests that the new regulatory regime is not the only contributing factor, national economic culture, particularly the degree of individual and masculinity in the country also promotes, to a small extent, investors spurious herding tendency.

CHAPTER 7: SUMMARY, CONCLUSION, AND RECOMMENDATIONS

7.1 Summary

This chapter is the last in the series of chapters in this thesis. The chapter briefly recapitulates the research issues and gap in the literature. This is presented in section 7.2 and 7.3 respectively. Section 7.4 highlights the set research objectives. This is followed by a brief discussion on the methodology used to achieve these objectives in section 7.6. The empirical findings of the three main research hypotheses are presented in section 7.7. The chapter continues by tying-up the empirical findings and then discusses the overall results and its implications in section 7.8. Next, the contribution of the study. The chapter ends with section 7.9, which discusses the limitations of the study and provides some recommendations for future researchers.

7.2 Research issues

In recent decades, there has been a growing consensus among the policymakers to strengthen financial regulatory infrastructure in order to lessen the effects of investors' irrational exuberance and other market anomalies (Grosse, 2017; Guney et al., 2017; Hou, McKnight, & Weir, 2013; Zhou & Lai, 2009). This is because the severity of the existing market anomalies has indicated that the current regulations appear to have failed to keep abreast of the fast evolving development of the financial markets and the investors' myriad practices (Dodd, 2002; Kim, Koo, & Park, 2013). This development has spawned a number of regulatory initiatives since 2000, particularly in the U.S and Europe, with many countries around the world strengthening their reporting and other securities market infrastructure to mitigate market anomalies and stimulate market efficiency and stability (Ayres & Mitts, 2015; Jun 1993). Nonetheless, despite these laudable commitments by countries to curtail market anomalies, recent evidence suggests that investors' behavioral anomalies remain pervasive, particularly herding behavior, in both emerging and developed securities markets (Chang & Lin, 2015; Galariotis, et al., 2015; Huang, Wu, &

Lin, 2016; Li, Rhee, & Wang, 2016; Yao, Ma, & He, 2014; Blasco, Corredor, & Ferreruela, 2017; Clements, Hurn, & Shi, 2017; Litimi, BenSaïda, & Bouraoui, 2016). This raises an interesting question as to what actually constitutes the effects of these regulatory initiatives on investors' herding behavior.

7.3 The Research Gap

Despite the persuasive and repeated arguments on the potential economic consequences of financial regulatory changes, limited evidence exists in the extant literature that attempts to explore the direct effect of these regulation on investors' trading behavior (Armstrong, Barth, Jagolinzer, & Riedl, 2010; Hamberg, Mavruk, & Sjögren, 2013; Lo, 2013). A careful review of the prior literature indicates that the link between financial regulatory changes and investors' trading patterns generally requires further scrutiny. So far, only a few studies attempt to explore this connection (Beneish et al., 2015; Beneish & Yohn, 2008; Chau et al., 2013; Mensah & Yang, 2008). However, the limited studies available are typically narrowed to specific market (e.g. Kerl & Pauls, 2014; Voronkova & Bohl, 2005), or sample around a small size threshold (Chau et al., 2013; Lambertides & Mazouz, 2013), or single country study (Lo, 2013; Mensah & Yang, 2008). Therefore, the evidence documented so far is by no means generalizable. Moreover, with regards to investors' herding tendency, the evidence is so far mixed and usually limited to the U.S regulatory changes, notably Reg. FD (e.g., Arya et al., 2005; Mensah & Yang, 2008). Thus, we virtually lack evidence on the impact of these regulatory initiatives on investors' herding practice in the EU financial markets, except for positive feedback trading, which is considered as an element of herd mentality documented in IFRS literature (Chau et al., 2013; Lambertides & Mazouz, 2013).

7.4 Research Objectives

Motivated by the above-identified issues and the gap in the literature, this study set to achieve the following three research objectives:

1. To investigate whether mandatory IFRS adoption promotes or inhibits the intensity of investors' herding practice in the EU equity markets.

2. To identify the impact of the new EU financial market regulatory directives on the level of investors' herding practice in the EU equity markets.

3. To analyze the influence of national economic culture on the effect of financial regulatory changes on investors' herding practice in the equity markets.

7.5 Theoretical Framework

To better comprehend how financial regulatory changes affect investors' information environment, this work builds on previous literature and uses signaling theory and efficient market theory to explain the effects of two important regulatory changes; mandatory IFRS adoption and changes in financial market regulatory infrastructure on investors' herding practice. The use of these theories stems from the fact that the theories are seemingly competing because of several similarities in the phenomena they address. Both theories try to address problems of information asymmetry in the markets. Furthermore, this study also uses institutional theory to guide the evaluation of the role of national economic culture being an informal institutional factor. The institutional theory postulates that the actions of an entity are legitimate, proper, desirable, or appropriate within some socially constructed system of beliefs, norms, values, and definitions (Biesenthal et al., 2018). Therefore, for any new regulation to be successful, it must operate in accordance with society's norms and values (culture).

The above theories, therefore, underpins the study's research framework. The framework as shown in Fig. 4.1 tries to integrate the two facets of financial regulatory directives, namely, (i) the adoption of global reporting benchmark (IFRS) and (ii) the EU financial market regulatory directives and then (iii) moderating the role of national economic culture. The integration of these two significant regulatory changes into a single research framework is deemed essential, as research has shown that the new regulatory changes are more or less bundled and therefore difficult to disentangle. If not appropriately examined, it would be difficult to separate with complete certainty which factor has which effect.

Interestingly, the findings of this study as shown in chapter six above are in agreement with all the three theories considered in this study. The summary of the findings can be found in section 7.1. 6 of this chapter.

7.6 Research Methodology

To achieve the set research objectives, the study employed and modified two extensively applied herding measures of Cross-Sectional Standard Deviation (CSSD) and Cross-sectional Absolute Deviation (CSAD) proposed by Christie and Huang (1995) and Chang et al. (2000) respectively, using stock return dispersion as a function of aggregate market return as a proxy for herding behavior. The rationale behind these herding measures is that limited deviation of returns around their cross-sectional average implies that investors ignore their prior heterogeneous information and follow the market consensus in their trading patterns.

7.7 Summary of the Empirical Findings

Chapter 6 of this thesis reports the empirical results of this study**.** The chapter begins with testing the benchmark model (see equation 3) in order to detect whether investors' herding practice exists in the market. The results as shown in Table 6.1 indicate that

except for the German market, there exists supportive evidence of herding behavior in all of the sample markets. Hence, suggesting that the herding phenomenon exists in the sample markets.

The next estimate seeks to find whether the mandatory IFRS adoption has an incremental or reducing effect on the observed herding practice, in line with this study's first research question (RQ1). Specifically, the research question sought to explore whether the mandatory IFRS adoption promotes or mitigates the intensity of herding phenomenon in the EU equity markets. The empirical findings show that the adoption of IFRS appears to have encouraged the herding phenomenon. To avoid misleading interpretation, the researcher subjected these findings to further analysis in line with prior research that argues that herding may sometimes be unintentional but spurious (i.e., driven by fundamental information). Results of this additional analysis as shown in Table 6.5 indicate that the herding evidence as observed earlier in the EU equity markets is largely driven by fundamental based trading, which the researcher believes arises from improved transparency emanating from the adoption of IFRS. In other words, the results suggest that investors in the EU equity markets trade in a contemporaneous manner without necessarily mimicking the actions of others but due to reaction to common fundamental information. Drawing on signaling theory, one can deduce that the introduction of stringent reporting regulations like IFRS can serve as a signal by which firms demonstrate their commitment to communicating more transparent, more comparable and high-quality financial disclosure to both sophisticated and non-sophisticated investors. Therefore, this study concludes that the mandatory adoption of IFRS in the EU promotes information based trading and mitigates irrational investment behaviors like intentional herding.

The second research question of this study sought to examine the effect of other financial market regulatory directives. This is deemed significant given that prior

literature argues that a number of financial market regulatory directives were issued virtually the same time with the adoption of IFRS in the EU. Therefore, the clustering of these regulatory directives would make it difficult to unravel which factor has which effect. Therefore, in a quest to addresses this concern this study tests the effect of EU financial regulatory directives discretely. The findings of this empirical test as shown in Table 6.3 indicate that financial regulatory change is also another instigating factor of the observed herding practice in the EU equity markets. However, when subjected to additional analysis, the findings reveal that the herding behavior induced by financial regulatory directives is also spurious not intentional.

Having established the evidence of spurious herding induced by two facets of financial regulatory changes discretely, the next phase is to test the combined effect of these regulatory changes on the dependent variable. The findings confirm that the two regulatory changes have a joint effect of improving information based trading as indicated by spurious herding. These findings support the assumption behind EMH; that assets prices reflect all available information at all times, and that investors interpret this information in an unequivocally rational way.

Furthermore, the third research question in this study attempts to addresses the need to highlight the role of other environmental factors on the effect of financial regulatory changes. Literature has shown that financial regulation is but one of a multitude of factors capable of improving market informational efficiency. Some country-specific factors are as vital as the regulations themselves. Of these, national economic culture is construed to have a significant influence on financial regulations. Therefore, the researcher estimates the influence of national economic culture on the effect of each financial regulatory change under consideration in this study. The results of this estimate reveal that national economic culture, particularly the degree of individualism and masculinity tend to have a significant influence on the observed spurious herding practice. This suggests that

investors in the EU countries characterized by high level of individualism are more likely to allow the investor to have an irrefutable right to act based on his/her judgment and to use information, as he /she understands it. This makes investors in this kind of society to use their heterogeneous information signals instead of following the market consensus in their trading patterns. Moreover, masculinity is also found to have a significant influence on the investors spurious herding. This may be explained by the fact that investors in a masculine society tend to be assertive and decisive when making an investment decision. The emphasis here is on the quality of information available. Therefore, when herding observed in this kind of society, it is likely to be spurious, not intentional.

Table 7.1: Summary of the Study's Research Questions, Objectives, and Hypotheses

Research Question	Research Objectives	Research Hypothesis tested	Result
1. Does mandatory IFRS adoption promote or inhibit of Investors' herding propensity in the EU equity markets?	To investigate whether mandatory IFRS adoption promotes or inhibits the investors' herding propensity in the EU equity markets.	**H1.** There is a positive relationship between mandatory IFRS adoption and investors' herding propensity in the equity markets.	Supported
2. What is the impact of the EU financial market regulatory infrastructure on the level of investors' herding practice in the equity market?	To identify the impact of the new EU financial market regulatory directives on the level of investors' herding practice in the EU equity markets.	**H2**. There is a significant association between financial market regulatory changes and investors' herding practice in the equity market.	Supported
3. What is the role of national economic culture on the effect of financial market regulatory changes on investors' herding practice in the equity market?	To analyze the role of national economic culture on the effect of regulatory changes on investors' herding practice in the equity market	**H3.** National economic culture moderates the effect of financial regulatory changes on investors' herding practice.	
		H3a: Ceteris paribus, national economic culture, particularly the degree of power distance, moderates the effect of financial regulatory changes on investors' herding practice.	Not supported
		H3b: Ceteris paribus, national economic culture, particularly the degree of uncertainty avoidance distance, moderates the effect of financial regulatory changes on investors' herding practice.	Not supported
		H3c: Ceteris paribus, national economic culture, particularly the degree of individualism moderates the effect of financial regulatory changes on investors' herding practice.	Supported
		H3d: Ceteris paribus, national economic culture, particularly the degree of masculinity, moderates the effect of financial regulatory changes on investors' herding practice.	Supported
		H3e: Ceteris paribus, national economic culture, particularly the degree of Long-term, Orientation is likely to influence influences the effect of financial regulatory changes on investors' herding practice.	Not Supported

7.8 The contribution of the Study

By examining the link between financial regulatory changes and investors' herding practice, this study contributes to the extant academic literature in some ways. First, while much of the existing literature focuses on investigating the capital market effects of IFRS adoption from the perspective of firm's cost of capital (Ball, 2006; Daske et al., 2008; Kim et al., 2014; Persakis & Iatridis, 2016; Shi & Kim, 2007); analysts' forecast (Byard et al., 2011; Hodgdon et al., 2008; Tan, et al., 2011); value relevance (Capkun et al., 2008; Gjerde et al., 2008; Siekkinen, 2016); information asymmetry (Beneish & Yohn, 2008; Dumontier & Maghraoui, 2007; Wang & Welker, 2011); information acquisition costs (Ball, 2006), the this study focuses on examining the capital market effect of IFRS from the perspective of investors' trading behaviour. Research addressing this link is a dearth. Hence, this study is among the very few that explicitly explore this direct connection. In doing so, the thesis complements the efforts of few previous studies that attempt to examine the effect of IFRS adoption on investors trading behavior in the European financial markets (see Chau et al., 2013; Lambertides & Mazouz, 2013). However, the present study differs in the methodology used, variables employed, and the sample countries. For example, while Chau et al., (2013) employed noise-trader models to examine the effect of IFRS adoption on investors' positive feedback trading (which is an element of herding mentality), the present study uses cross-sectional stock return dispersion as a function of aggregate market return to examine the effect of IFRS on investors' herding practice. To the researcher's knowledge, this study is amongst the few earliest attempts made to test this direct connection.

Second, in addition to examining the effect of IFRS, the study also explores the effect of other financial market regulatory directives (that took place before, concurrent, and after the adoption of IFRS) on investors' herding practice. This joint exploration is

important as research has shown that the new regulatory changes are more or less bundled and therefore difficult to disentangle. If not appropriately examined, it would be difficult to separate with complete certainty which factor has which effect (Brüggemann, Hitz, & Sellhorn, 2013; Christensen et al., 2013). Prior studies largely fail to consider this joint analysis. Therefore, in deviance to most prior study, the present study tries to account for the joint economic effect of IFRS and other EU financial market regulatory directives. In this way, the study would joint in the ongoing academic debate on the costs and benefits of these series of regulatory changes.

Fourth, the present study attempts to addresses the need to highlight the influence of other environmental factors on the effect of these changes. Literature has shown that financial regulation is but one of a multitude of factors capable of improving market informational efficiency (Daske et al., 2013). Some country-specific factors are as vital as the regulations themselves (Cieslewicz, 2014; Houqe et al.; Nurunnabi, 2015; Qu & Leung, 2006; Shima, Kim & Gordon, 2011; Shima, Kim & Yang, 2012). Of these, national economic culture is construed to have a significant influence on financial regulations (Chand et al., 2012; Cieslewicz, 2014; Nurunnabi, 2015). However, despite the profound influence of national economic culture on financial regulations, the factor largely receives no explicit recognition (Borker, 2014), its effect around IFRS adoption has not been fully estimated (Hope, 2003; Karaibrahimoglu & Cangarli, 2016; Nurunnabi, 2015).

Fifth, the findings of this thesis deepen our current understanding of the role of some vital economic theories used in explaining the market information environment. For instance, the results presented explicitly demonstrate how a signaling theory can be used to explain the arrival of new information signal following financial regulatory changeover in the context of both developed and emerging EU equity markets. Specifically, the thesis shows that changes in financial reporting regulations can serve as a signal by which firms'

exhibit their readness to present more transparent and high-quality financial disclosure to all classes of investors instantaneously. Therefore, to the extent that financial regulatory changes are found to send a positive signal to the market participants, this study concludes that the EU's IFRS adoption and the reform of its financial market regulatory infrastructure reflect an environment where fundamental-based trading is protmoted. Hence, confirming the predictions of another significant economic theory-EMH. Reletedly, the thesis also gives an additional insight into the role of institutional theory. According to the thesis's findings, institutional theory tends to provide the lens through which scholars can gain insight about how changes in financial regulations can be influenced by a country's institutional pillars, particularly such pillar of national economic culture, which emphasizes on the role of cultural-cognitive elements of institutions.

7.9 Implications of the study

The results of this study are expected to be of interest to academics, regulators, and policy-makers, and to investing public and other market participants who trade based on firm fundamentals and treating them as key indicators for future market movement. Moreover, the findings can be used to serve as a reminder to regulators in other jurisdictions to ensure that their countries are maintaining clean and healthy financial markets regulatory infrastructure. Lack of stringent institutional and enforcement infrastructure may prompt intentional herding which has the potential to ignite the grave financial crisis. As Nasarudin et al. (2017) opine; while ways such as new legislation and regulations can curtail the issues related to information advantage like insider trading, it appears unlikely that any legal action can be taken regarding investors herding activity. After all, it is a choice made by investors. Therefore, to foil investors' herding practice, regulators should look back into herding's impetus, market uncertainty and investor

assurance of having enough credible information and sound knowledge in making their investment decision.

For the EU policymakers, the findings are expected to help them gauge whether Regulation EC1606/2002 and other subsequent directives have effectively realized their set objective of improving reporting system and mitigating market anomalies. According to Palea (2013), the goal of such regulation is to ensure a higher level of information transparency and facilitation of more effective and cost-efficient functioning of EU capital markets. In addition, given that the recent EU financial crisis has been attributed to investors' behavioral biases, particularly herding behavior (Singleton-Green, 2014; Szyszka 2010; Galariotis et al. 2015; Galariotis et al. 2015), the findings of this study are hoped to provide a useful insight to policymakers to revisit the root cause of the crisis by providing them with the basis to use empirical accounting and finance research to arrive at defensible policy conclusion or to gauge the effects of their earlier decisions. This is particularly important given the fact that the findings presented in this study suggest that the herding behavior observed in the EU financial market seems largely not to be a destabilizing one. Nonetheless, this does not rule out the fact that other forms of herding exist, but based on the evidence presented in this study there is support for the contention that intentional herding practice in the EU equity markets is in insignificant. Galariotis et al. (2015) and Galariotis, et al., (2016) also document similar argument when examining the effect of important macroeconomic information on investors' herding behavior in the European equity and bond market respectively.

7.10 Conclusion and Suggestions for Future Research

Motivated by the policy relevance of mandating the use of IFRS and the recent review of EU financial market regulatory infrastructure, this thesis examines whether the new regulatory regime promotes or inhibits investors' herding activity in the EU equity markets. In doing so, the thesis used a data consisting of monthly closing prices of the

major constituents; France-CAC40, Germany-DAX 30, Sweden-OMX30, UK-FTSE 100. Czech-PRAGUE, Hungary-BUX, and Poland-WIG20.

The sample period stretches from 11-1-2000 till 31-12-2016. The findings of this thesis indicate that investors in the EU equity markets herd significantly around the new regulatory regime. However, the herding activity observed is largely fundamental driven not intentional. Furthermore, given the interdependence between financial regulations and countries specific factors, this thesis explores whether the observed effect varies across EU countries, due to varying incentive of preparers from different cultural orientation. The empirical results show that the observed fundamental driven herding induced by financial regulatory changes has been significantly influenced by national economic culture, particularly, the degree of individualism and masculinity.

To this end, while the findings in this thesis do not intend to rule out the fear that the EU financial regulatory changes could have other potential adverse consequences, at least concerning investors' herding behavior, these results should lay that concern to rest. Notwithstanding this fact, the thesis is not without its limitations. One of its limitations is that the sample size is limited to countries that are assumed to represent the EU member states in terms of their legal origin. If a different sample size is used, there may be a possibility that the results may differ. Hence, future study should consider expanding the sample size or even consider testing the phenomenon for the entire EU financial markets. However, this thesis only considers a single behavioral bias of investors; i.e., herding behavior that hitherto used to be confined within the realm of the rational finance paradigm. Future research may consider extending the present research by exploring the presence of herding and positive feedback trading around the new regulatory regime concurrently. This is import given that these two forms of behavioral biases are usually regarded as co-directional investment behaviors and are the most commonly cited forms of investor' behavioral convergence.

Moreover, as the focus of the present study is on the EU equity markets, the results generated herein may not be generalized to other jurisdictions in the world. It would thus be interesting to test whether the adoption of IFRS or reform of financial market regulations in other jurisdictions is likely to alter the propensity of investors to engage in herding activity.

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LIST OF PUBLICATIONS

1. M. L. Danrimi, Mazni Abdullah, and Ervina Alfan (2018). Investors' Herding Practice: Do IFRS and National Economic Culture Matter? *Journal of Managerial Finance.*
2. M. L. Danrimi, Mazni Abdullah, and Ervina Alfan (2018). IFRS and Investor Trading Pattern a conceptual framework. *Asian Journal of Accounting Perspective.*