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# Forensic Detection for Earnings Management in Selected Code Law Nations of Europe

Jef Lee Garner  
*Walden University*

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# Walden University

College of Management and Technology

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Jeffrey Lee Garner

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2018

Abstract

Forensic Detection for Earnings Management in Selected Code Law Nations of Europe

by

Jeffrey Lee Garner

MS, University of Memphis, 2002

BBA, Loyola Marymount University, 1977

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Applied Management and Decision Sciences

Walden University

August 2018

## Abstract

This study investigated earnings management in European firms. The private investors became victims of manipulated earnings where few laws offered regulatory oversight. The study forensically examined the attributes of earnings management identified using a discretionary accrual model published in Jones' work and Schippers' work. The firms' managers should fulfil agency theory when they made reporting decisions, and they should act in the investors' best interests to fulfil stewardship theory. The managers failed as they seemed to favor insiders when they reported manipulated earnings to outsiders like small investors even though the managers published financial reports conforming to the International Financial Reporting Standards. The investors depended on the decision usefulness of the reports. The study used the data of 432 listed firms in 11 code law nations. The paired  $t$  test identified significant differences between reported and economic earnings to find earnings management attributes and between economic and restated earnings to find earnings management cases. The research found that managers seemed to manipulate discretionary accruals to misstate earnings and reduce the decision usefulness of reporting. The data came from published financial reports and databases. The firms represented 11 nations and 9 industries that excluded banking and insurance. Almost 17% of nations and industry segments reflected earnings management attributes. About 29% of firms restated at least one annual earnings, and 84% of the restatements appeared to offset manipulation. The research results should prompt social change for small investors where regulators would redress the manipulation using stronger investor protection laws to improve the reported earnings quality and its decision usefulness.

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## Dedication

I dedicate my doctoral work to my wife, born Terry Ann Harris, who supported my efforts for education and encouraged me despite the challenges and sacrifices.

I dedicate my doctoral work to my children—Heather, Amanda, Samantha (deceased), Jeremy, Laura, and Kaitlyn—to show we can learn something new to apply to an important need. I appreciate and thank them for their help in their individual ways. One daughter applies her teacher education to home school her daughter. My son enjoys his scholarly pursuits through his education after his combat service as a Navy corpsman.

I dedicate my studies to my brothers, George and Scott, who wonder what I see in school but respect my goal and support my efforts. While their help often means leaving me and my books alone together, I appreciate their tacit approval.

Last but not the least, I dedicate my doctorate to my late parents who encouraged me in their distinctive and separate ways to pursue my studies and complete my education. My mother, born Jane Holmes Milne, always supported my studies from my earliest memory, no matter the timing or duration. My dad, Gordon A. Garner, found my studies interfered with our family activities, at times, but he sincerely encouraged me to finish my baccalaureate studies and degree. They never graduated despite significant years in college. The obstacles presented them with the outbreak of World War II and raising their sons following that very difficult time brought them frustrations and undeserved limitations throughout their professional lives.

Underway for a decade, my doctorate persists in importance for me because quitting would disappoint the family and facilitate yet another family miss.

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## Chapter 1: Introduction to the Study

### **Introduction**

Many investors lack the information to detect earnings management in order to make informed investing decisions (Akisik, 2013). In addition, Ahmed, Neel, and Wang (2013) found that firms in 18 code law European nations manipulated their reported earnings. I aimed to create positive social change for small investors by prompting regulators and lawmakers to enforce the publication of transparent financial reports by managers in public companies. The societal problem of earnings management has left small and private investors vulnerable to using poor quality financial data. The individual investor often lacks the sophisticated tools and professional knowledge to identify bad data and compensates for it in their decisions (Glaum, Baetge, Grothe, & Oberdörster, 2013).

I open Chapter 1 with the introduction and then describe the problem. The next section contains the purpose, followed by the significance of the study. I follow with the background and continue to the theoretical framework. The research questions and hypotheses are next, followed by the nature of the study and other information. In the subsequent sections, I address the scope, assumptions, limitations, delimitations, and implications of my study. I close with a summary, highlighting the next two chapters.

### **Background**

Internationally recognized standards include the U.S. Generally Accepted Accounting Principles (GAAP) and the International Financial Reporting Standards (IFRS), and the governing boards for both sets of standards promulgate full disclosure

and transparent reporting by publicly held and listed companies (Miková, 2014). Transparency embraces many attributes of quality, including accuracy, completeness, and consistency (Mackenzie et al., 2015). The U.S. regulations require decision quality information for investors in published financial reports (Schmidt, 2012). In many European jurisdictions, companies lack consistent regulatory demands for the enforcement of transparent, high quality financial reports despite the expanded jurisdiction represented by the European Union (Ahmed et al., 2013). While the IFRS has promulgated full disclosure standards (European Securities and Markets Authority, 2014), the flexibility afforded to managers in interpreting and applying the standards has interfered with the consistency and quality in earnings reporting and its cross-border comparability for investors' decision support (Skinner & Srinivasan, 2012). Lang, Lins, and Maffett (2012) defined high quality as a needed attribute of financial reports to ensure cross-country comparability for capital market investors when jurisdictions apply the same standards, like IFRS. Earnings management undermines high quality financial reports, defined as dependable earnings reports, and their usefulness for supporting investor decision making (Cameran, Campa, & Pettinicchio, 2014).

The figurative gaps in consistency and transparency have facilitated quality problems, including earnings management (D'Alauro, 2013). The variability in the reporting has continued to undermine the transparency, comparability, and consistency as attributes needed for published financial information (Zéghal, Chtourou, & Fourati, 2012). Many code law jurisdictions have continued to struggle with enculturating and promulgating the view that earnings management is now outmoded and prohibited. The

managers who practice earning management fail to align with capital market regulatory guidelines in the European Union (European Securities and Markets Authority, 2014).

The financial reporting quality figuratively suffered from the continued managerial practice of earnings management that was philosophically contrary to the stated position of the IFRS (Charitou, Karamanou, & Lambertides, 2015). Capkun, Collins, and Jeanjean (2016) found that the low quality in the form of earnings management continues in the European financial reporting. The managers of firms have leveraged the integral flexibility of the IFRS regarding accounting methods selection and accrual estimates to facilitate earnings management using these discretionary elements in the standards (Liu & Sun, 2013). The report preparing managers have subverted the visibility of current earnings and the long term economic prospects due to their reporting erroneous earnings, sometimes year-to-year, undermining informed investor decisions with erroneous information (Harris, 2012). The full compliance of firms and their managers is not dependable, and even the firms and management teams have domiciled in and owned by people from the common law jurisdictions protecting the investors, like the United States, Canada, and the United Kingdom, the latter two under IFRS, still present exceptions for compliant, quality reporting (Bardos, Golec, & Harding, 2013). The comparatively weak enforcement in code law nations versus common law nations combined with the view that earnings management is normal and enabled by the technical flexibility innate under IFRS (Liu & Sun). The combined conditions increased the risk of manipulation through management discretion and left investors vulnerable to

the inaccurate earnings reports presented in Europe where earnings management persist (Stadler & Nobes, 2014).

Huang and Liang (2014) stated that the financial reporting supported the information needs of investors and other users of financial information. Conflicting studies of reporting quality under the IFRS due to earnings management appear in the research literature. For example, Stadler and Nobes (2014) identified earnings management cases under the IFRS as a negative reporting quality attribute when they measured quality attributes in the largest firms across 11 countries with large economies, including many under the IFRS in Europe. The authors defined disclosure and transparency as positive earnings quality indicators for firms (Stadler & Nobes, 2014).

Alves and Vicente (2013) found that earnings management levels were similar before and after adopting IFRS in Brazil and Portugal despite the expected improvement. Logically studied together, the code law nations of Brazil and Portugal share cultural views related to commercial behaviors. Alves and Vicente measured the pervasive earnings management as a function of discretionary estimates and accruals. Al Farooque (2016) identified earnings management in Australia after the adoption of the IFRS despite its active enforcement of reporting quality. Balsari and Varan (2014) found earnings management symptoms in Turkey following the 2005 IFRS adoption, despite some increased direct foreign investment. Balsari and Varan claimed that investors erroneously perceived improved reporting dependability and earnings quality, based solely on the IFRS adoption. They found that investors failed to consider other relevant factors, like management flexibility through interpretive and discretionary choices and cultural

variations in enforcement of the standards (Balsari & Varan, 2014). Ji and Lu (2014) found that earnings management persisted under the IFRS despite the myopic perception of capital market investors that financial reporting and earnings quality would or should improve under IFRS, thus highlighting the need to study and expose earnings management symptoms crucial action.

### **Problem Statement**

The general problem was that investors could not expect decision quality financial reporting from publicly held firms in the European Union countries (Yip & Young, 2012). The specific problem was that many investors lacked the information to detect earnings management to make proper investing decisions (Akisik, 2013). Others stated that earnings management persisted in firms in many of Europe's code law nations (Capkun et al., 2016) in about 7% of firms (Keung & Shih, 2014). Earnings management is a technical euphemism for financial performance manipulation (Gakhar, 2013). Ahmed et al. (2013) found that firms in 18 code law European nations manipulated their reported earnings. Ahmed et al. concluded that earnings management continued after adopting the IFRS as firms published erroneous earnings reports. I intended to address the gap in earnings management research for code law nations by evaluating the earnings reported for symptoms of earnings management for firms in selected European Union countries (see Stadler & Nobes, 2014).

### **Purpose**

The purpose of this quantitative study was to forensically examine the attributes and cases of earnings management among listed firms in selected European code law

nations. I used a longitudinal method to find earnings management symptoms manifested as excessive discretionary accruals using various tests (Dayanandan, Donker, Ivanof, & Karahan, 2016). I compared reported and economic earnings for statistically significant differences (see Govendir & Wells, 2014). I evaluated the statistical significance using Student's *t* test methodology (see Dechow, Hutton, Kim, & Sloan, 2012). I identified restatement cases, and I compared the restated and economic earnings for matches to uncover earnings management (see Loyeung, Matolcsy, Weber, & Wells, 2016). The design was longitudinal, and I used secondary data for 4 years (see Watrin, Ebert, & Thomsen, 2014) from the Mergent database (see Tarca, Morris, & Moy, 2013). I excluded banking, financial, and insurance firms (see Dechow et al.). The independent variables included the reported earnings, restated earnings, and total assets. The dependent variables were reported and economic earnings normalized using total assets (Keung & Shih, 2014). I calculated the economic earnings by adjusting the reported earnings for the discretionary amount, the management earnings adjustments (see Brown, Preiato, & Tarca, 2014).

## **Research Questions and Hypotheses**

### **Research Question (Q1) With Hypotheses**

Q1: To what extent did earnings management differences occur between reported and economic earnings in each firm year?

A significant difference would support the view that managers were not faithful to their roles under agency and stewardship theories with respect to the quality of earnings



reported to investors, implying the occurrence of earnings management (Al Farooque, 2016).

*H1<sub>0</sub>*: The difference between the economic and reported earnings was not statistically significant.

*H1<sub>a</sub>*: The difference between the economic and reported earnings was statistically significant.

### **Research Question (Q2) With Hypotheses**

Q2: To what extent did earnings management differences occur between reported and economic earnings for a segment of firms (in an industry or domiciled in a nation) in a year?

A significant difference would support the view that managers were not faithful to their roles under agency and stewardship theories with respect to the quality of earnings reported to investors, implying the occurrence of earnings management (Al Farooque, 2016).

*H2<sub>0</sub>*: The difference between the economic and reported earnings for a given segment was not statistically significant.

*H2<sub>a</sub>*: The difference between the economic and reported earnings for a given segment was statistically significant.

### **Research Question (Q3) With Hypotheses**

Q3: For the subset of firms that reported an earnings restatement for at least 1 fiscal year (during the study period), to what extent did differences (implying no earnings

management) occur between the restatement amount and the economic earnings for the firm year observations?

In this situation, failing to reject the null hypotheses implied that the management had been truthful (but belated) in correcting the accounts and had removed or reversed earnings management. Rejecting the null hypotheses supported the view that managers fulfilled their roles under the agency and stewardship theories with respect to reporting earnings for investors (Al Farooque, 2016). The restated earnings amount differed from or did not match the economic earnings for that firm year.

*H3<sub>0</sub>*: There was no statistically significant difference between the economic and restated earnings.

*H3<sub>a</sub>*: The difference between the economic and restated earnings was statistically significant.

### **Theoretical Framework**

The theoretical constructs of the agency and stewardship theories aligned this study with the relevant and related bodies of knowledge. Financial accounting, reporting, and disclosure standards, represented by the IFRS, operationalize agency theory (Al Farooque, 2016). The standards promulgated that reported earnings resulted from transparent and consistent practices across firms and jurisdictions. The agency theory supports user confidence in decision quality information (Zhang, Liang, & Sun, 2013). Reporting transparency vis-à-vis required disclosures redresses the incentives to manipulate estimates for accruals and create hidden balance sheet reserves used to practice earnings management or manipulate the reported earnings (Aerts, Cheng, &

Tarca, 2013). The published financial statements should report the firms' economic results. The managers who prepare the reports act as agents of the owners and investors; managers should service all the dependent users, regardless of the significance of their investment in the firm (Chen, Cheng, & Lo, 2013). The stewardship theory represented the manager preparers' corresponding, fiduciary responsibility for accurate and transparent information for the investors and other statement users, like lenders and regulators (Manyara & Benuto, 2014). Over 100 nations adopted the IFRS to promote their businesses for direct foreign investment, increasing the global optimization of investment capital (Tarca, 2012). The nations adopted the IFRS to leverage the financial reporting integrity attribute, which the managers owed to the investors, demonstrating their fiduciary roles as stewards (Li, Hsu, & Liu, 2013). The managers of firms were the agents for all the owners and should act in the owners' best interests (Zhang et al., 2013). As stewards, the managers owe the owner employers their best efforts to ensure the owners maximize the benefits from their ownership of the firm (Manyara & Benuto, 2014). Managers who practice earnings management fail to fulfil their obligations to the owners under both the agency and stewardship theories (Al Farooque, 2016).

### **Nature of the Study**

This study was quantitative, and I collected secondary data from the published financial statements (see Ahmed et al., 2013). I used a longitudinal design to compare reported and economic earnings for about 400 firms for 4 years, excluding banking, financial, and insurance firms (see Dechow et al., 2012). The independent variables included the reported earnings, restated earnings, and total assets. The dependent

variables were reported and economic earnings normalized using total assets. I analyzed firms and segments for earnings management symptoms, including the industry (see Goel, 2012) in selected European Union nations. I used the  $t$  test in my methodology to determine the statistical significance between the reported and economic earnings (see Ji & Lu, 2014). I searched for earnings management cases where managers published a restated earnings amount (see Loyeung et al., 2016), using the  $t$  test for the significance of the restatement amount versus the economic earnings (see Ji & Lu, 2014). I focused on forensically detecting earnings management symptoms in the reported earnings, testing the significance and determining if the symptoms recurred during the 4-year, longitudinal period. I determined the extent of earnings management symptoms vis-à-vis managers' discretion in reporting by evaluating the economic versus reported earnings by firm and segments of firms (see Ahmed et al., 2013).

### **Other Information**

The western European nations and Australia adopted the IFRS over 10 years ago in 2005 (Tarca, 2012). The adoption of the IFRS continued in other nations, such as Brazil (Cavalier-Rosa & Tiras, 2013) and Canada (Liu & Sun, 2013), that adopted the IFRS for reporting after 2005. Newer members of the European Union, notably the Eastern Bloc nations, joined the European Union at various times and deferred their adoption of the IFRS after 2005, allowing less time for resolving reporting and systems since the IFRS adoption was too recent for confidence. For example, Jerman and Novak (2014) documented the problems with the IFRS in Slovenia, and Istrate, Eugenia, Carp, Bogdan-Robu, and Pavaloaia (2015) confirmed the limited progress toward improving

accounting and reporting quality using IFRS in Romania. The duration of accounting and reporting under the IFRS supported my selection of the Western European nations adopting the IFRS in 2005 for a study of mature practices and stable systems (see Stadler & Nobes, 2014).

The European 2005 adoption eliminated the IFRS exceptions or modifications reflected in the earlier IFRS adoption (Mackenzie et al., 2015), while Brazil retained some domestic practices as the IFRS exceptions (Cavalier-Rosa & Tiras, 2013), making the Brazilian reports noncomparable to the standards in the European jurisdictions. The jurisdictions in Europe applied the IFRS as promulgated by the International Accounting Standards Board without modification (European Securities and Markets Authority, 2014). The Western European countries included code law jurisdictions that reflected the cultural inclination for low quality earnings, facilitated by low investor protection and characterized by manipulating estimates and accruals, which are symptoms of earnings management (Brown et al., 2014). Other jurisdictions like Australia (Al Farooque, 2016) and Canada (Liu & Sun, 2013) avoided exceptions or modifications, but they were common law jurisdictions with more robust regulations intended to deter investor earnings reporting problems, including earnings management (Gopalan & Jayaraman, 2012). The selected nations for this earnings management study included only code law jurisdictions with mature reporting systems absent exceptions or modifications in standards that generated differences in earnings reporting and jeopardized my search for earnings management symptoms.

## Definitions

*Discretionary amount:* A dependent variable. The earnings adjustment made by managers and facilitated by low investor protection (Aerts et al., 2013). The managers manipulate accounting estimates and accruals to generate the discretionary amount for a firm in a year. The discretionary amount is a problematic symptom of earnings management (Brown et al., 2014). I found cases where the managers manipulated reporting using a discretionary amount. I determined or valued the economic earnings by adjusting the reported earnings (up or down) by the discretionary amount for firms (Ahmed et al., 2013). Aerts et al. (2103) used various models to identify components of accruals of revenues and costs by segregating routine accruals from discretionary or abnormal accruals. The discretionary amount item was the amount of potential earnings management (Dechow et al., 2012).

*Earnings management:* An independent variable. The tacit manipulation of company accounting, record keeping, and financial reporting (Gakhar, 2013). Earnings management is a symptom of management behaviors aimed at reporting an earnings amount that supports insider goals without regard to the consequences to other investor owners (Aerts et al., 2013). The manipulation reflects a violation of the agency and stewardship theories, which presented the responsibilities of managers to service investor owner needs without bias (Zhang et al., 2013).

*Economic earnings:* A dependent variable, was the earnings that a firm's managers should publish in the financial reports. The managers who prepared the reports acted as agents of the owners and investors (Al Farooque, 2016). The managers should

serve the information needs of all the dependent users, regardless of the significance of their investment in the firm (Chen & Cheng et al., 2013). I calculated the economic earnings by adjusting the reported earnings for the discretionary amount, the management earnings adjustments (Brown et al., 2014).

*Reported earnings:* An independent variable. The official or stated earnings published in the financial statements by listed firms and the amount reported to regulatory agencies (Mackenzie et al., 2015). The managers calculated the reported earnings in conformance with the accounting standards of the nation, which was the IFRS in the nations whose companies I studied (see European Securities and Markets Authority, 2014). Managers publishing the reported earnings violated the accounting standards when they incorporated a discretionary amount to manipulate the earnings amount published for investors and other users (Miková, 2014).

*Restated earnings:* An independent variable. The official or stated earnings published as a change or update for the already issued financial statements of a prior period by listed firms and the amount reported to regulatory agencies (Mackenzie et al., 2015). A firm restates its earnings to correct inadvertent errors (Loyeung et al., 2016) and reverse symptoms of earnings management (Wiedman & Hendricks, 2013).

*Total assets:* An independent variable. The summation of all tangible and intangible properties and entitlements that a firm held. The total assets amount appears on the published statement of financial position or balance sheet for each firm year (Mackenzie et al., 2015). Keung and Shih (2014) affirmed the use of total assets for

normalizing or scaling earnings values for comparisons, making it a crucial element to calculate the dependent variables in my study (see Brown et al., 2014).

### **Assumptions**

My assumptions included the availability of the appropriate information from secondary sources online. I planned to download information from financial reporting databases, including Mergent and others (see Tarca, 2012) that warehoused annual financial reports and archived the historical records. The databases held multiple years of reporting at a level of detail conducive to performing and completing my analyses (see Weiss, 2014). Where gaps in the data or detail occurred, I planned to use the actual firms' financial reports if available online (see Goel, 2012) before I decided to discard a firm from my analysis (see Ahmed et al., 2013). I modeled the information to search for relevant cases; I expected to find firms with earnings management symptoms, but some distinctive cases might have evaded detection.

One blanket assumption was that I would expand the collective accounting knowledge of earnings management for our society in the jurisdictions where financial reporting was IFRS compliant. The U.S. jurisdiction under the U.S. GAAP figuratively struggled with earnings management even though it presented an environment where the legal and commercial practices reflected aggressive enforcement with robust, protective laws for investors' and other users' interests (Cassell, Dreher, & Myers, 2013). Charitou et al. (2015) commented that the U.S. investors respected IFRS compliant reporting in jurisdictions with robust legal systems, like those benefitting from them in the U.S. jurisdiction. The earnings management research in the IFRS domain appeared less



compared to the U.S. research efforts but sufficient to indicate significant risks and stated needs for improved investor protection. I anticipated that the financial results reported by firms in the European code law nations would demonstrate their disparate regulatory views consistent with the findings of Prencipe (2012). Brown et al., 2014) found firms in the code law nations exercised less aggressive audit practices and enforcement for investor protection. I expected the continued behaviors in financial reporting would enable me to bring visibility to new aspects of the problem (see Kang, 2013).

### **Scope of the Study**

My research of earnings management targeted the publicly held businesses in IFRS compliant jurisdictions in the European Union that were not banks, financial services, or insurance companies (see Liu & Xiong, 2013). The European Union adopted the IFRS as published by the International Accounting Standards Board as a financial reporting requirement in 2005. This European community of nations adopted the uniform standard to support and facilitate cross border investments and reporting comparability (Charitou et al., 2015). I planned to select my study cases from the population of national jurisdictions within the European Union, focusing on selected nations and selecting larger firms, like the research program of Stadler and Nobes (2014), domiciled in the distinctive legal and cultural systems of the code law jurisdictions.

The code law countries of Western and Northern Europe provided me active, mature economies. The code law nations facilitate a focus on financial reporting quality issues vis-à-vis their cultural origins and their legal systems, including examples like Italy (D'Alauro, 2013) as well as Germany (Christensen, Lee, Walker, & Zeng, 2015).

The reporting under the two legal systems provided a system contrast of the code law of Italy and Germany versus the common law of the United Kingdom (D'Alauro, 2013), for example. The legal systems manifested distinct views of investor protection laws, hence a different enforcement environment relative to auditor and other governance influences on the reporting quality, with the code law being demonstrably weaker (Gopalan & Jayaraman, 2012). The industries related to the selected firms included manufacturing, logistics, services, transportation, and other for-profit, listed firms. I excluded businesses in the banking, financial services, and insurance industries (Liu & Xiong, 2013). I planned to group conglomerates as an industry with their mixture of industry affiliations (Ahmed et al., 2013) because I wanted to explore industry relationships as well as national or jurisdictional distinctiveness despite their shared code law legal system.

### **Limitations**

My limitations included finding sources of granular information that I could acquire and retrieve online. While I planned to select companies of the stated jurisdictions, I had to deselect some firms where the financial statements, notes, and other relevant information were not sufficiently disaggregated and detailed that I could complete my rather granular analyses. I detail my selection and deselection criteria in Chapter 3.

My limitations included my own resources, as my information came from sources that could include costly databases used by investment and banking professionals. I needed access donated or available at economical rates to meet my research needs and my personal, budgetary limitations.

The unlikely inclusion of the United Kingdom, New Zealand, and Australia, reflecting the common law legal systems, depends on the dearth of usable firm cases within the European code law economies; the United Kingdom and Ireland technically qualify as European albeit common law jurisdictions (Buhr, 2012), which added complexity. Canada is a new IFRS adopter compared to Europe, resulting in failing the maturity criterion in my work, and its regulatory environment is most like the U.S. economy with robust protective regulation for the investors (Liu & Sun, 2013).

Non-European code law jurisdictions like Brazil and China adopted the IFRS more recently than 2005. Their jurisdictions allow exceptions to the published standards promulgated by the International Accounting Standards Board, making them technically noncomparable for this study. Researchers have showed the issues of earnings management were problematic in Brazil (Cavalier-Rosa & Tiras, 2013) and China (Zhou & Habib, 2013).

### **Significance**

The manipulation of financial reports has undermined the ability of people who are invested in public or listed companies to assess the risk-return potentials of their investments (Beneish, Lee, & Nichols, 2013). Earnings management has undermined the capital market mechanism. Managers practicing earnings management deliver reporting manipulated to improve the personal position of a minority of investors or insiders at the expense of other investors (Aerts et al., 2013). It is necessary to reduce reporting quality risks for small investors who are often the outsiders (Kang, 2013) managing personal investments (Employee Benefits News, 2014). Among the outsiders, only selected

investors have the knowledge and resources to analytically evaluate the quality of financial statements (Glaum et al., 2013) and to change their decisions for erroneous results discovered analytically (Gopalan & Jayaraman, 2012). Compliance with the IFRS alone did not improve reporting quality (Christensen et al., 2015). The managers of firms have manipulated financial reports under the IFRS despite the jeopardy for investors using the reports (Strohmer, 2014). The positive social impact of this research might support the investors by alerting regulators and lawmakers who oversee the delivery of accurate, published financial reports.

Investors have leveraged their personal portfolios to build financial wellbeing (Employee Benefits News, 2014). Forensically identifying earnings management symptoms might enable investors to avoid wrong decisions due to misinformation. Publicizing the potential findings of this study about earnings management might prompt regulatory inquiry and response, like some U.S. cases (Burks, 2011) and German cases (Strohmer, 2014). The negative publicity from the German regulatory actions has discouraged managers from practicing earnings management (Hitz, Ernstberger, & Stich, 2012), affirming the potential for positive social impact where my research results might enable me to prompt regulatory action in other nations. The public outcry from publicity could prompt investigation into criminal action as well as civil action for loss recovery (Zhang et al., 2013). In the European Union, regional responses could prompt jurisdictional actions by the member nations (European Securities and Markets Authority, 2014). The potential findings of this research might enable me to support regulators and investors in overcoming the dearth of information on the historical and cultural practices

that anchored earnings management behaviors by managers in code law nations (see Berrios, 2012).

### **Summary**

In Chapter 1, I introduced my topic and developed key aspects of my study and its importance for society worldwide. I identified the benefit for individuals who invest as well as the global commercial community in Chapter 1. In Chapter 2, I review the literature addressing the subject and highlight the gap that I identified and discussed in Chapter 1. In Chapter 3, I present my research methodology and analytical program. In Chapter 4, I describe my analyses and disclose my quantitative findings. In Chapter 5, I share my interpretations and conclusions as well as some opportunities for future research. I conclude my dissertation with a discussion of its potential impact and why the work is important and significant for the social good.

## Chapter 2: Literature Review

### **Introduction**

The problem was many investors lacked the information to detect earnings management to make proper and informed investing decisions (Akisik, 2013). The purpose for this quantitative study was to forensically examine the symptoms and cases of earnings management among listed firms in selected European code law nations. I used a longitudinal methodology to find earnings management symptoms manifested as excessive discretionary accruals using various tests (Dayanandan et al., 2016). I identified cases of earnings management by comparing reported and economic earnings for statistically significant differences (Govendir & Wells, 2014).

Earnings management is the tacit manipulation of company accounting, record keeping, and financial reporting (Gakhar, 2013). Former Director Levitt (1998) of the U.S. Securities Exchange Commission described earnings management metaphorically as poisoning financial reporting. Earnings management in jurisdictions under internationally recognized financial reporting and accounting standards, including the U.S. GAAP and IFRS (Miková, 2014). Nations use and apply accounting standards to ensure the constituents of the capital markets have dependable reports for their investing and lending decisions related to the publicly listed companies (Aerts et al., 2013).

My research and analytical work targeted selected code law nations in Europe where studies were scarce (Lai, Li, Shan, & Taylor, 2013) and the risks were substantive due to cultural attitudes and minimal regulatory coverage for investor protection (Gopalan & Jayaraman, 2012). I targeted a gap in the IFRS research that continued to

target firms in one nation or a small group without regard to institutional and cultural norms and the legal system (Dayanandan et al., 2015). Financial reports reflected earnings management attributes that compromised the quality of published reports (Schmidt, 2012). The reports favored a select and privileged few, the *insiders*, who benefited from their asymmetric versions of timely, complete, and accurate information. Conversely, the *outsiders*, other investors with comparable entitlement (Huang, Wang, & Zhou, 2013), received late and inadequate information to support their investment decisions (Brown et al., 2014).

*Asymmetric information* meant that some financial report users were aware of very different information versus others (Beneish et al., 2013). The accounting standards promulgated the position that all users had access to and received the same quality, financial information at the same time (Ahmed et al., 2013). The investor protection afforded by some jurisdictions discouraged and prevented the information asymmetry (Akisik, 2013). In their seminal work, Leuz, Nanda, and Wysocki (2003) published findings that earnings management related inversely to investor protection laws. They observed that the legal approaches reflected varied levels of protection by jurisdiction on the international scene. Cameran et al. (2014) found the enforcement and auditing variations yielded variations in the investor protection. Quality financial reporting presumed accurate and timely information, presented in a consistent manner from year to year with disclosures detailing exceptions and special cases (Glaum et al., 2013). The consistency included both policies supporting the accounting as well as the amounts recorded for estimates and accruals (Mackenzie et al., 2015).

Researchers and regulators discovered cases where managers resorted to earnings management to ensure reporting results that met targets and expectations of the capital markets' investors, owners, lenders, and others (Ahmed et al., 2013). Gakhar (2013) viewed earnings management as a euphemism for the manipulation of reported financial results and the position to mislead decision makers in the capital markets, often to the advantage of a select few labeled insiders who gained advantage from their deceptive practices (Aerts et al., 2013). The insiders' advantages included maximizing executive, short term compensation incentives, meeting lender financial performance benchmarks, sustaining a profitability growth history for opportune investments and mergers, or meeting regulatory requirements for sustaining the firm's public listing status. The insiders could find many motivations that drove the behavior (Wang & Campbell, 2012).

The European Union proffered regional statutory oversight while its member nations widely diverged on their cultural attitudes and approaches to investor protection and the enforcement of financial reporting standards (European Securities and Markets Authority, 2014). The European Union unified the reporting of publicly listed firms within the economic community under the published and unmodified the IFRS in 2005 (Mackenzie et al., 2015). Prior to 2005, the member nations applied variations of IFRS with domestic exceptions and domestic systems governing their individualized reporting (Doupnik & Perera, 2015). Over 100 nations now applied some form of IFRS, but many, like China and Brazil, allowed domestic firms to use exceptions to the standard, published practices, preserving some of their respective domestic, traditional accounting practices (Cavalier & Tiras, 2013).



The United States protected its domestic investors and other financial statement users with aggressive investor protection laws and enforcement of its domestic reporting standards, the U.S. GAAP (Brown et al., 2014), but researchers continued to find indicators and symptoms of earnings management that varied but persisted (Aerts et al., 2013). The IFRS jurisdictions in Europe faced far less scrutiny from research and regulators, making the risk of manipulated financial statements higher yet for investors and other statement users (Jerman & Novak, 2014). In addition, many European jurisdictions presented historical, cultural norms for earnings management, a trait of code law systems (Lang et al., 2012). The financial accounting approach seemed to allow, even encourage, the managers to establish secret reserves and deferrals and to use other income smoothing techniques, labeled *permanent conservatism*, to ensure management and owners provided the capital market investors, lending institution underwriters, and regulators with a desirable or expected financial result and position (Gopalan & Jayaraman, 2012). Researchers made less progress in examining earnings management in the European jurisdictions than in the United States, but the validity and utility of the IFRS for global capital markets depended on the detection and deterrence of the manipulation of financial reporting, evidenced by jurisdictions like the United States deferring the adoption of or convergence with the IFRS pending improved performance (Alon & Dwyer, 2016). On a broad scale, Capkun et al. (2016) found cases of manipulated earnings across Europe, reviewing cases in many nations and concluding that traditions of earnings management and reporting manipulation continued. The authors stated that the historic normalcy of permanent conservatism with the secret

reserves known only to selected insiders was a pervasive trait or attribute of the financial statements in many of Europe's code law nations (Capkun et al.).

### **Major Sections**

I segmented the balance of Chapter 2 into sections covering the following topics: I started with the literature search strategy to address how I found my references. I then identified and reviewed the theories related to the problem, discussed in the theoretical foundation section. Next, I identified and discussed the key variables and attributes of prior research in the subsections of the section labeled key variables. In this section, I reflected on considerable details as I review numerous sources. I concluded with the summary and conclusion section.

#### **Literature Search Strategy**

The library searches supporting my research involved many labels and iterations for identifying and isolating timely and relevant information. From a technical perspective, earnings management and terms describing its synonyms and symptoms were central to searches for historical and current work in this area. For the Walden library queries, I used the terms *manipulation, distortion, smoothing, earnings persistence, accounting errors, discretionary accruals, restatement announcements, earnings restatements, information asymmetry, aggressive accounting practices, and fraud and enforcement actions* in my efforts to find academic work on earnings management. I followed the work of researchers like Hamid, Houssein, Chaabane, Ayedh, and Echchabi (2014) and Keung and Shih (2014).

Geographic terms were relevant for the library searches. The focus terms included member nations of the European Union. For perspective, the U.S. research projects and historical depth of coverage proved important for recognizing potential avenues of inquiry as well as analytical tools for models to operationalize hypotheses and to support and defend my eventual conclusions (Alon & Dwyer, 2016). Other regions and nations that already adopted the IFRS provided other bodies of work related to the research topic. Australia and New Zealand adopted the IFRS in 2005; the works provided selected materials on equally mature IFRS users and the benefits and problems associated therewith. China, Brazil, and Canada, more recent adopters, each presented different cases due to cultural and adoption parameters (PriceWaterhouseCoopers, 2014). The Latin American reporting in Brazil reflected different code law attributes than China or Europe, even though they were code law jurisdictions (Martinez, 2013). Also, Brazil and China were two jurisdictions that adopted the IFRS with the exceptions (Cavalier & Tiras, 2013). Canada, a common law jurisdiction, adopted the IFRS without modification, as did Australia, New Zealand, and the European Union (Ramanna, 2012).

Useful and applicable research documents included academic journals as well as selected regulatory reporting and governmental publications. Library searches provided primarily academic journals, both historical, seminal documents rooted in pioneering work and current authors' output of timely and thought-provoking research that highlighted current progress and identified new avenues of inquiry. Some academic materials included theorists' and pragmatists' texts on research concepts and methodology that supported my research design, such as Shanker (2016) and Dixon,

Singleton, and Straits (2015). Government sources included status reporting and the IFRS adoption information from the regulators in the United States and the European Union. Ending in 2012, the U.S. Securities Exchange Commission published annual reports on the tasks underway for as well as apparent reservations and benefits of adopting the IFRS for the U.S. financial reporting (Securities Exchange Commission, 2012). The European Union's capital market oversight agency, the European Securities and Markets Authority, reported the progress and benefits since implementing the IFRS in a report to the European Commission (European Securities and Markets Authority, 2014). Regulatory literature referenced the statutory accounting standards for the IFRS in a codified form, as in Mackenzie et al. (2015). Most of my source materials came from the current academic journals.

### **Theoretical Foundation**

The conceptual framework for earnings management depended on the two theories of Agency and Stewardship. These two represented related aspects of the reason and basis for the professional managers' job that existed to service the owners and stockholders. Barbu and Baker (2010) stated the owners depended on the managers as loyal representatives of the owners' interests, or in other words were agents for their needs. Not unrelated, Donaldson and Davis (1991) showed the managers were also custodians of the owners' assets and strategic needs. The managers performed fiduciary roles for the owners as well as other stakeholders. The authors found the level of investor protection regulations and the enforcement organizations represented the level of assurance by government for the sanctity and effectiveness of the relationships between

owners and the managers they hired and compensated. Huang et al. (2013) found where laws and enforcement were strong, the managers faced more severe consequences in their failure to deliver these legislated expectations for publicly held and listed companies.

Some researchers proffered other theories to explain that earnings management distorted reported performance. Alberti-Alhtaybat, Hutaibat, and Al-Htaybat (2012) proposed variations of Disclosure theory to explain financial reporting disclosure processes and benefits. The actions of the managers interfered with the explanatory theories proposed by the authors when the authors demonstrated the managers' lack of agency and stewardship toward their constituents. Signal theory offered potential support for the earnings management focus, but Wiedman and Hendricks (2013) showed that signaling was integral to adopting the IFRS. After implementation, manipulated reports delivered low quality earnings due to management abuse of the accounting principles and reporting standards. While the alternate theories offered plausible approaches, the frameworks for Agency and Stewardship theories provided the strongest cohesion.

Not all sources supported the compatibility of Agency and Stewardship theories. Donaldson and Davis (1991) found Agency and Stewardship theories somewhat at odds in the context of Australia. The authors found Agency theory supported strong governance based on the separation of the chief executive officer and board chair roles in addition to robust investor protection and enforcement. Conversely, the authors found Stewardship supported combining the two roles in one person. The person with the roles of chief executive officer and board chair could grasp the fiduciary responsibilities to the

owners as well as the personal vesting in the firm's long term success, absent equity ownership.

### **Agency Theory**

Agency theory faced scrutiny and figuratively fueled discussion among many researchers. Jensen and Meckling (1976) provided a seminal work in which they investigated the benefits of disclosure in demonstrating agency to financial statement users, whether owners, lenders, or other users. The authors found the disclosures precluded or at least reduced information asymmetry between the insider managers and outsider investors and lenders. Jensen and Meckling found firms that ensured accurate information for the markets and their analysts also enjoyed benefits like lower agency costs, and more specifically, lower premiums on the cost of capital acquired in the capital markets. The authors seemed to offer an accepted, seminal view of Agency theory.

In other cases, researchers expressed compatible but distinct views. Fama (1980) explored agency in businesses where owners and managers were distinct; entrenchment vis-à-vis management ownership failed to drive owner focused decisions, planning, and behaviors. Fama found that managers who were not vested in the firms' and owners' success allowed and created problems. The managers performed or enabled suboptimal planning and execution by focusing on the managers' success and interests. Eisenhardt (1989) analyzed Agency theory as it applied to the owners and managers of public firms in light of the earlier authors' works. The author found they aligned with the *positivist agency view*, where the owners and managers shared a common interest but had conflicting goals and methods for success. Eisenhardt identified the persistence of

conflicting needs, like owners seeking accurate performance information versus managers manipulating events and reporting results to maximize their apparent performance. Dayanandan et al. (2015) affirmed the view that managers supporting personal goals at the expense of owner investor interests violated their agency roles.

Agency theory explained the issues confronting managers as the agents for the owners they represented when making choices among options with different outcomes. He and Yang (2014) found that owners who presumed to depend on managers' agency, blindly provided managers with the opportunity for manipulation of financial results and other performance measures. The authors described separated ownership and control as the case of absentee business owners using professional managers to operate their business. In their analysis of the Statement of Financial Accounting Standard 142, Goodwill and Other Intangibles, Ramanna and Watts (2012) found managers subverting their role under Agency theory when they applied excessive discretion to buttress their results and incentive pay. The managers showed behaviors and processes that supported earnings management when they manipulated accounting in the U.S. firms. Ang, Hutton, and Majadillas (2014) found *entrenchment*, where managers of the U.S. firms shared ownership, contributed to information asymmetry for new investors where outside and insider-manager interests purchased a business in the proverbial leveraged buyout. Negative agency persisted for new investors as pre-sale overvaluation and earnings management facilitated overpricing stock, which transferred financial risk and costs to new investors.

Conversely, Alves (2012) found Portuguese firms including managers as owners to deter short term action in favor of long term value building. Guillamón-Saorín and Sousa (2014) found in their study of Spain and the United Kingdom that positive agency supported the need to reduce the asymmetry and improve information transparency among all interests. Li et al. (2013) found managers in Taiwan employed earnings management to satisfy owners' and the market analysts' expectations. As such, the managers maximized their perception of agency for their stakeholders.

Similarly, Latif and Yang (2012) found earnings management as evidence of strong agency among the U.S. biotechnology firms. The authors found the investors perceived that the earnings management activity preserved the firms' normal performance, effectively smoothing earnings for investment performance even though the earnings management distorted short term results and risked reducing future result. The firm had to recover using long term results. Despite the challenges, Alves (2014) found Portuguese governance through independent board members improved the long-term results. The improved governance process constrained the managers who abided by policy in the interests of stakeholders over themselves, demonstrating positive agency. Alves found earnings quality at a higher level in Portugal due to their increased monitoring and objectivity in setting standards. Toukabri, Jilani, and Jemâa (2014) discovered an inverse relationship between the social responsibility reporting quality and earnings management in the U.S. firms. The authors found agency problems where earnings management occurred, but the socially conscious firms reflected strong agency attributes. The managers of the socially conscious firms recognized their responsibilities



to society and owners while the self-centric managers, willing to manipulate reported earnings, failed as agents.

### **Stewardship Theory**

Researchers argued that managers loyally served their firms' owners out of a sense of duty, fulfilling the intent of the Stewardship theory. Donaldson and Davis (1991) found executives that identified themselves with the success of the business accepted responsibility for the long term accomplishments and problems confronted while achieving them. Choi and Pae (2011) found Korean managers avoided earnings management practices, attributed to their enculturated attitudes that precluded the managers' abuse of the stewardship and fiduciary responsibility to financial report users despite available flexibility under the IFRS.

With some irony, Latif and Yang (2012) found the investors, perhaps myopic in their views, favored the erstwhile stewardship aspect of persistent earnings, considering the positive market response on stock price. The authors observed that the reduced response to disclosed earnings management versus substantive business events suggested more investors dismissed or minimized the apparent violation of Agency theory. Ironically, Latif and Yang found earnings management supporting Stewardship theory and vice versa, even though discovery later could have a negative market response for stock price. Conversely, Hoitash, Hoitash, and Johnstone (2012) noted recourse against the chief financial officer involved punitive business and market perceptions due to the executive's fiduciary responsibilities under the tenets of Stewardship theory. The available punitive actions by owners supported stewardship and deterred earnings

management, as the chief financial officer's stewardship role favored the stakeholders' needs for dependable business processes while protecting assets and quality reporting. The authors found cases where the chief financial officer failed to serve their stakeholders' interests despite the consequences, such as reduced personal performance measures and compensation for the executive.

Lai and Li et al. (2013) determined that reporting quality and reliability related directly to stewardship. Nicolaescu (2014) found the limited or skewed stewardship of managers diminished for the insiders with reduced information asymmetry through audit firm rotation. The rotation drove auditor independence and consequently more transparent reporting. Nicolaescu found the rotation process delivered the intended and generalized stewardship for all stakeholders uniformly. Stewardship attributes supplanted or deterred earnings management behaviors and expecting it drove punitive actions by stakeholders. The demand for stewardship also spurred corrective action and raised awareness of investor expectations.

### **Historical Literature Review for Key Variables**

If a jurisdiction was not searched for earnings management evidence from all available perspectives, a gap could leave investors vulnerable to asymmetric information or even fraudulent financial reporting. Nations on domestic and internationally leveraged standards reflected cases of manipulated reporting, whether industrial or emerging markets, whether large or small markets, and whether publicly listed or privately owned firms. By example, Koerniadi, Krishnamurti, and Tourani-Rad (2014) found firms generally constrained and risk averse in New Zealand's emerging market economy.

Sharma and Kuang (2014) found aggressive accounting in use in New Zealand, with its emerging traits, and its firms' managers manipulated reported earnings. Earnings management persisted as a global problem despite legal systems and the jurisdiction's economic status or size.

Schipper (1989) defined *earnings management* as an intended distortion of reporting to provide insiders a desired gain. Schipper found the earnings management symptoms in manipulated accrual levels; he acknowledged that some accruals and some management decision latitude were appropriate. Schipper recognized that the accounting standards deployed situations and methods requiring estimates, and financial statement users depended on objective decisions by managers to determine the estimates for accruals, like bad debt allowances and inventory obsolescence. McNichols and Wilson (1988) developed empirical tests and modeling for detecting the discretionary accruals, particularly looking for those chosen by managers to distort reported earnings.

McNichols and Wilson (1988) recognized the risk of misstating the split between discretionary and non-discretionary accruals with the risk of incorrectly valuing or assessing the earnings management. Jones (1991) expanded on the detection process and developed time series models to estimate the amounts of discretionary accruals recorded to defer or reduce the reported earnings. Using firms in varied industries investigated by a U.S. agency for tariff and import relief, Jones found the agency did not test or validate reported earnings. The author found the firms' managers, motivated to receive the transfer payments for relief, evaded discovery until Jones studied the manipulated amounts vis-à-vis discretionary accruals. His approach proved useful in later studies, too.

Schipper (1989) concluded that earnings management included the disclosure problems, too, where managers failed to transparently communicate at least some details of assumptions and risks impacting the reported earnings and financial position. These seminal works provided nascent modeling and views for identifying the U.S. earnings management cases and situations.

Sloan (1996) offered insights into how managers manipulated earnings using accruals. While his focus was on forecasting future earnings and isolating the real earnings supported by assets, especially cash, he developed models that facilitated the discovery of distorted and manipulated earnings. Other researchers argued that high growth could create the patterns of cash versus accruals imbalances in a longitudinal review that the growth outpaced the lagging cash generation. As a follow-up to the seminal work by Sloan on accruals in use for manipulating earnings, Richardson, Sloan, Soliman, and Tuna (2006) confirmed that the accruals distorted the earnings, finding that the discretionary accruals did not relate to the sales growth countered by attempted rebuttals. Healy and Wahlen (1999) proposed the idea for the U.S. laws and standards that limited management latitude or decision space to prevent earnings management. They challenged regulators and standard setters to set limits or evaluation guidelines against which to judge estimates and changes. At the same time, Healy and Wahlen conceded that the concept of limits applied to small industry or other aligned groups, such that pervasive estimate standards would range from difficult to futile if estimates were to continue to reflect reality. The authors concluded the reporting depended on the judgment of managers, not simple prescriptions.

## **Overview of Research in Different Regions**

**U.S. jurisdiction work.** Considering the U.S. research history, Healy and Wahlen (1999) reviewed the earnings management literature in a meta-analysis, focusing on its implications for standard setting and the regulatory environment. More recently, researchers covered a wide range of earnings management approaches and attributes or symptoms within the U.S. jurisdiction. Wesley and Ndofor (2013) explored the environmental viewpoint that the ethical problem for earnings management was the investors' expectations, such that the investors seemed to motivate the managers to commit corporate malfeasance and falsify the U.S. financial reports. Beneish, Press, and Vargus (2012) found a direct relationship between insider trading, a violation of the U.S. law, and earnings management in distressed, the U.S. firms, the earnings management leveraged to enhance the illegal profit from stock transactions. Fleischman and Walker (2013) found that firms where managers manipulated budgets and earnings related inversely to the ethical attributes of the accounting managers. The earnings management proved symptomatic of ethical and legal violations.

Johnson, Fleischman, Valentine, and Walker (2012) investigated real transaction management or event manipulation. The authors identified aggressive accounting practices like accounting and reporting manipulation to facilitate favorable and preferred results reporting. The authors focused on the expedient, unethical decision making by managers who prioritized favorable operating performance and their compensation benefits above investors' needs, including transparent reporting and earnings quality. Latif and Yang (2012) studied biotechnology firms and found that financial news on a

major, adverse event, like the cancellation of drug tests in final stages, generated a greater stock market price reaction than concerns for earnings management overstating earnings. A large body of research supported the range of topics highlighted above using different proxies and measurement methods to identify cases and symptoms of the earnings management problem in the U.S. financial accounting and reporting.

Other authors considered the positive aspects, the indicators and proxies for earnings management deterrence and prevention. Kim, Park, and Wier (2012) determined that the U.S. firms that displayed substantial corporate social responsibility also generated high quality financial statements and avoided Security Exchange Commission scrutiny and their enforcement actions, effectively reflecting high moral attributes related to effective earnings management deterrence. Dorantes, Li, Peters, and Richardson (2013) found that the enterprise systems implementation provided an environment that improved the firm's information quality, including financial reporting and deterred earnings management. Finally, as will be discussed in detail later, the firms with strong governance practices provided a strongly deterrent environment; managers could or did not leverage manipulation for improving reported results. Brown et al. (2014) viewed the U.S. environment as reflecting a robust legal system for deterring earnings management compared to other global, industrial economies. They used audit and enforcement action as proxies for cross country comparisons. Call, Chen, Miao, and Tong (2014) found managers employed earnings management less to achieve the routine quarterly earnings announcements in the United States, using discretionary accruals as the earnings management proxy. Occasional participants in the quarterly press releases showed a

higher propensity for manipulating earnings to match releases. The accumulated work on positive attributes for minimal earnings management supported risk assessments, enabling confident use of the U.S. firms' financial statements.

**International work.** More than 100 nations applied the IFRS for their domestic financial accounting and reporting, including the established, industrial economies as well as the underdeveloped, emerging economies (Tarca, 2012). Ramanna (2012) studied the international politics of the IFRS harmonization, recognizing the challenge of gaining global support for a singular initiative potentially positive and helpful worldwide. Many nations adopted the IFRS to improve reporting quality, which supported user confidence in reporting, which drove reduced investor costs and increased direct foreign investment. Many emerging economies, some in the European Union, implemented the IFRS at the 2005 regional adoption date or subsequently, dependent on their jurisdiction status. Jerman and Novak (2014) documented the application of the IFRS in Slovenia and Jianu and Jianu (2012) confirmed the limited progress with their analysis of accounting and reporting quality using the IFRS in Romania. Their traditions, characterized as fiscal versus economic, involved overcoming earnings management to address bank lenders' concerns and contractual obligations. Conversely in the Czech Republic, Jindrichovska, Kubickova, and Kocmanova (2014) found reticence for the public companies to adopt the IFRS even though progress as a market economy started in 1989. Waweru and Riro (2013) studied the earnings management apparent in an emerging economy, evaluating evidence on a sample of Kenyan firms listed on their stock exchange. The authors identified firms that reflected accounting traits enabling earnings management.

Researchers working in the global economy started to evaluate the scope of earnings management practices, the risks and costs of misstatements, and the severity of the reporting inaccuracies occurring in jurisdictions outside the United States. By example, Reyad (2013) determined that a direct relationship existed between external auditing quality, a tool of corporate governance, and the level of earnings quality in Egypt. Hamid et al. (2014) studied earnings management activities in Malaysia, another emerging market reporting under the IFRS, relative to the firms' operational and financial attributes and their governance. Ivashko (2012) studied the entry of Romania and the Czech Republic to the European Union and the advantages they experienced relative to their trade structures, that is, the export and import businesses, using the measure of revealed comparative advantage. Ivashko found direct foreign investment increased for both nations after their accession to the European Union, an expected benefit of the IFRS adoption and a key component of the revealed comparative advantage. Istrate et al. (2015) also investigated the adoption of the IFRS in Romania. An emerging economy, the authors attributed improved financial reporting to the IFRS vis-à-vis reduced discretionary accruals, which brought commerce and investment to that Eastern European nation.

Lai and Li et al. (2013) established that reporting and earnings quality under the IFRS needed more research. Lai and Li et al. investigated the quality of accruals in the Australian jurisdiction during the years before and after the mandatory adoption of the IFRS in 2005. The authors identified the inherent trade-off between financial reporting relevance and reliability with respect to attributes such as the accruals for working



capital, non-current operating accounts, and financing accruals. While the IFRS delivered some benefits, like relevance and comparability among the adopting jurisdictions, the authors acknowledged that the disadvantages for Australia, like accrual and audit quality, negatively impacted the faithful representation historically available under the domestic GAAP. The reduced reporting reliability interfered with the delivery of unbiased, objective and error free financial reporting. Carcello, Hermanson, and Ye (2011) identified future research needed in governance and the effect of audit committees on earnings quality in foreign nations, particularly the code law nations with weaker governance practices.

**Western and Northern Europe.** Western and northern European nations originated the concept of the IFRS to support the nascent European Union, but broad use of the unmodified IFRS did not occur until 2005. The first decade brought some research regarding reporting quality and earnings management. Voeller, Bremert, and Zein (2013) found enforcement of the IFRS in Germany robust enough to deter some of the earnings management pervasive there and elsewhere in their accounting traditions. Liu, Yuen, Yao, and Chan (2014) also found the more robust enforcement in Germany deterring earnings management, but they found research expense was easier to manipulate under the IFRS. Conversely, Dayanandan et al. (2016) found improved reporting quality in France and Scandinavian nations, but with discretionary accruals still enabling manipulation on a less prevalent scale. Earnings management continued in German code law nations. Disclosure and transparency were pivotal attributes.

Nobes and Perramon (2013) examined the accountants' education on and understanding of the IFRS as another aspect of the infrastructure to facilitate success. While not the first, they acknowledged the basic issue of competence in the IFRS besides governance and audit quality as sources of reporting quality problems. Berrios (2012) found a lack of readiness in business schools in preparing future accounting professionals using the IFRS for their financial accounting and reporting. Berrios found the U.S. institutions did not prepare and the European programs were weak despite the adoption there. In 2005, Australia adopted the IFRS absent preparation; the listed firms generated pervasive, erroneous financial reporting (Tarca, 2012), an avoidable problem seemingly minimized by the U.S. educators and professionals alike. The preparation and subsequent review appeared weak in its grasp of the new accounting and reporting standards just as the European jurisdiction seemed slow to overcome the inertia of the prior accounting traditions (Berrios).

Some research supported a growing acknowledgement and awareness of the continued low quality in financial reporting in the European Union (Stadler & Nobes, 2014). In Western Europe, Njah and Jarboui (2013) reviewed a sample of French firms already using the IFRS that bought or merged with other firms. The authors found that the managers manipulated the earnings prior to the transaction to maximize results and buttress their success, manipulating accruals over which they exercised discretion and decision making. On a broader scale, Capkun et al. (2016) found cases of manipulated earnings across Europe, reviewing cases in many nations and concluding that traditions of earnings and reporting manipulation continued. The authors stated the historic

normalcy of permanent conservatism with the secret reserves known only to selected insiders was a pervasive trait or attribute of the financial statements in many of Europe's code law nations.

### **Background for the European Union Since the Adoption of the IFRS**

More recently, researchers surveyed the international scene for rough indicators to open new fields of inquiry, like the work of Akisik (2013) in 51 nations labeled emerging markets. Some regulatory change directed at business practices in employment and pollution reduced the inducement for direct foreign investment, while others, including accounting and reporting, had positive impacts on investment by reducing accounting and auditing risks along with the cost of capital premiums that previously paid for them. The U.S. GAAP and its domestic, regulatory environment were enforced aggressively for decades before the development of the IFRS in legal environments weaker in or largely absent the enforcement of reporting standards, especially aspects supporting industry and year-to-year consistency and across country border comparability, some goals for promulgating the IFRS (Akisik).

Harris (2012) found that the IFRS promulgated general practice principles and foundational concepts, relegating practice decisions to the managers preparing the reporting. The author found that auditors attested to their quality and compliance with the standards. Harris concluded that the preparers and auditors enjoyed more flexibility in the development and evaluation of reporting, respectively, and the use of the IFRS enabled decision making flexibility and manipulation, handicapping efforts by auditors to differentiate proper and asymmetric reporting. By example, Harris found the fair value

principle under the IFRS supplanted the historical cost principle under the U.S. GAAP. Fair value facilitated balance sheet restatements, which in turn made earnings management less detectable, since it was more difficult to differentiate reasonable versus unreasonable revaluations. The author observed that the ability of regulators and auditors to leverage the IFRS to forestall earnings management required more research and investigation.

The U.S. earnings management research far exceeded the inquiries and discoveries under the IFRS umbrella. Regulators enforced the U.S. GAAP and the domestic investor regulation aggressively, but Wesley and Ndofor (2013) found that managers still employed earnings management to meet the U.S. capital markets' expectations, perceiving the costs, risks, and consequences of earnings management justified the benefits in the market's stock price response. The authors used discretionary accruals to indicate the existence of earnings management. Wang and Huang (2014) found the U.S. managers more likely to manipulate earnings during economic down turns to sustain apparent profitability. The U.S. managers were less likely to reduce earnings for smoothing in growth periods. Before and since these work examples, researchers figuratively scoured the U.S. capital market reporting for many earnings management attributes, aspects, and manifestations.

Researchers explored earnings management, investigating different elements and searching for evidence from varied sources and model. Kang (2013) found the adoption of the IFRS improved value relevance of financial reporting as returns on stock price improved in 13 European nations. The author could not credit improved reporting quality.

In another IFRS jurisdiction, Nulla (2014) found evidence that earnings quality improved in Canada after the 2011 adoption while Burnett, Gordon, Jorgensen and Linithicum (2015) failed to find improvement in earnings quality under the IFRS. The authors found Canadian firms based selection of an international standard, either the U.S. GAAP or IFRS, on industry prevalence and the capital markets trading the firm's stock. The expectation for improved transparency using the IFRS combined with comparability of reporting from different nations and jurisdictions was indeterminate due to the quality issues, like symptoms of earnings management, including discretionary accruals and smoothing.

Brandsma, Kancs, and Ciaian (2013) investigated the role of *additionality*, the European Union's label for economic growth vis-à-vis synergy through membership, in the European Union Cohesion Policies. The authors studied firm-level investment support, which augmented the market forces for direct foreign investment within the European Union to buoy and optimize the less economically viable members. *Cohesion* was a program to move toward equalizing the standard of living and income per capita through investment in employment and infrastructure. Asien (2012) in the Middle Eastern and North African (MENA) political and economic reporting region and from the United Arab Emirates, proposed a globally useful, conceptual framework for earnings management, recognizing it broadly embraced all financial statements, including the accounts for position and valuation as well as cash flows. The label used by Asien for earnings management was *accounts manipulation* rather than the manipulation of only earnings inferred by earnings management; the process impacted far more than that

narrow scope. Studying earnings management to effect deterrence and control for it gained attention in many regions of the world, not just the United States and the IFRS jurisdictions, like Australia (Wee, Tarca, & Chang, 2014) and the European Union (Hitz et al., 2012).

### **Compensation Incentives for Executives**

A common perception emerged around executive compensation programs. Managers used earnings management to maximize their short term compensation vis-à-vis their financial incentives to meet financial and operating goals and targets. Hoitash et al. (2012) found that faulty internal control results that negatively affected the compensation of the chief financial officers, which served as an example of the consequences related to poor operating results. In addition, Kuang, Qin, and Wielhouwer (2014) found that the U.S. chief executive officers originating from within the firm were less likely to manipulate earnings than outsiders who arrived with short term views of performance and tenure. The outsider chief executive officers more often manipulated earnings using discretionary accruals. Control weaknesses and violations contributed to the potential for earnings management, and He and Thornton (2013) found internal control weaknesses inferred lower quality earnings for the U.S. stakeholders in the capital markets and drove earnings management concerns.

Chan, Chen, Tai, and Yangxin (2015) found that the U.S. firms implemented contractual deterrents against executives manipulating reported earnings. The firms adopted compensation *clawback* provisions, the label for retrieving or recovering incentive compensation already paid after the discovery of reporting errors or

manipulation in key performance indicators. Chan et al. found that the managers substituted real earnings management processes, so-called real transaction management, for accruals-based earnings management due to the establishment of the contractual recourse for earnings management and subsequent restatement. In addition, Iskandar-Datta and Jia (2012) analyzed the financial restatement and subsequent disclosure responses from stakeholders that drove executing *clawback* provisions in executive compensation contracts, finding the U.S. approach an apt deterrent. In another study, Gujarathi (2015) investigated cost classification shifting at one U.S. firm, Diamond Foods, Inc., for earnings manipulation and its compensation impacts vis-à-vis enactment of the *clawback* provisions in executive contracts upon disclosure.

Hoitash et al. (2012) found a sample of the U.S. firms that reduced the compensation paid to the chief financial officer to penalize the chief financial officer for misreporting financial results. Wang and Huang (2013) found that businesses changed the chief financial officer by terminating the current one to hire another, when they discovered low internal control quality. Wang and Huang confirmed low earnings quality was a crucial problem with poor controls. Finally, Beaudoin, Cianci, and Tsakumis (2015) found the incentive pay of the chief financial officers of the U.S. firms correlated with the apparent ethical quality of their financial reporting decisions. The authors found a negative relationship between earnings management symptoms and their measure of proxies for the moral disengagement of the financial executives. Many U.S. firms aggressively deterred the earnings management behaviors, leveraging their control over executive compensation and even employment

Little research proved available in published studies of European firms leveraging executive compensation to deter and control earnings management. Britzelmaier, Frank, Landwehr, and Reimer (2014) found a positive relationship between earnings management and the management compensation incentives in German listed firms. They determined that it proved motivational for managers to use earnings management. An Asian jurisdiction, Hsu and Liao (2013) found earnings management negatively impacted earnings quality under a pay-for-performance system in Taiwan where firms paid an employee profit-sharing bonus. The executive compensation was an example of an aspect of earnings management needing further research in jurisdictions using the IFRS.

### **Disclosures and Transparency**

The notes to financial statements along with management commentaries disclosed business issues, routine practices, and non-recurring financial situations for the users of statements. Undisclosed activities and events could represent cases or symptoms of some types of earnings management. Wee et al. (2014) found the disclosures posted by publicly held, Australian firms focused on accounting changes but lacked economic, business issues around the time they adopted the IFRS. The authors found that the firms appeared to attribute negative news like earnings drops to the IFRS adoption, signaling investors about current results and the prospect for future results' forecasts as well. Conversely, the authors found less management discussion and commentary focused on the accounting and IFRS adoption issues. Focused on another form of disclosure, Guillamón-Saorín and Sousa (2014) found the voluntary disclosure in press releases of public firms in the United Kingdom and Spain enabled managers to subtly manipulate the



capital markets by accelerating good news and delaying the disclosure of negative economic events.

Transparent reporting and disclosures represented hallmarks of the U.S. reporting, impacting its neighbor, Canada, and proved to be crucial goals of adopting the IFRS for cross country comparisons. Ascioğlu, Hedge, Krishnan, and McDermott (2012) found earnings management related inversely to both disclosure quality and market liquidity for a sample of the U.S. listed firms. Bhattacharya, Ecker, Olsson, and Schipper (2012) studied information asymmetry and earnings management as influential in setting the cost of capital. Bertomeu (2013) observed that transparency and disclosure varied inversely with reporting and audit risk factors, which increased the cost of capital. Bhattacharya et al. measured earnings management as a function of accruals, both normal and routine versus discretionary. The author nominated or identified special cases, including financial miscellaneous items excluded from operational earnings. The researchers found the disclosure quality related inversely to the cost of capital for investors, negatively impacting investment decisions.

Kouba, Chakib, and Halioui (2013) found Canadian disclosure quality seemed to constrain earnings management where the authors found operating changes indicated by nonfinancial performance measures. They viewed the published financial reports with management commentaries as evidence of disclosure quality. Aerts et al. (2013) found different disclosure requirements in four Anglo-American jurisdictions. The United States and Canada required disclosures using the domestic GAAP guidance and investor protection laws while the United Kingdom and Australia, under the IFRS, only

encouraged it. The authors found more constraint in discretionary accruals where disclosures using management commentaries enhanced the transparency. Gibbins and Pomeroy (2007) found disclosures and transparency lacking under Canada's domestic GAAP. Gibbins and Pomeroy observed that reporting with the notes and management commentaries integral to the published financial statements failed to highlight the needed information for cross-company and cross-industry comparability. Liu and Sun (2013) found the weak disclosure poignant as Canada adopted the IFRS in 2012 to signal their need for direct foreign investment vis-a-vis the international standards.

On the international scene, Capkun et al. (2016) investigated risk disclosures in the published financial management discussions for firms across 10 national jurisdictions using different accounting standards but with some level of investor protection and audit quality controls. The four nations included Germany, the United Kingdom, the United States, and China; only China and the United States followed their domestic GAAP standards while most conformed to the IFRS with some in the European Union since 2005. The authors found that the cultural conservatism in financial reporting negatively affected the level of disclosure in Germany. Lai, Lu, and Shan (2013) found financial reporting conservatism decreased with the IFRS adoption, related positively to increased disclosure. They focused on Australia before and after the IFRS adoption. Capkun et al. also found minor variation, stronger in the North American jurisdictions over European IFRS, and stronger in the United Kingdom than in Germany, where disclosure quality was negatively correlated with debt leverage, confirming some continued, traditional banking influence. The disclosure quality represented a challenge for nations adopting the

IFRS, whose legal systems gave disclosure little credence as their cultures were unaccustomed to it. Capkun et al. found the transparency and comparability envisioned by Europe moved only gradually toward a new culture of disclosure; the traditional conservatism proved pervasive despite the change, continuing as a norm despite the mandatory adoption.

### **Legal System and Enforcement Environment**

The legal system referred to the system of law in each jurisdiction as well as its approach to business regulations and their enforcement, especially investor protection and audit quality enforcement for this work. The legal system and enforcement collectively created the environment where earnings management faced deterrence or facilitation, the latter by inaction. Many nations applied the *code law*, *rules of law*, or *Franco-German system*, characterized by Brown et al. (2014) as promoting the permanent or long term conservatism. The nations allowed secret reserves and earnings management; transparency and disclosure were not robust under code law. The authors also recognized that code law jurisdictions enabled or even allowed asymmetric information for insiders' benefits while limiting the regulatory reach. The code law nations minimized investor safeguards and audit consistency that hurt new investors and minority, non-controlling interests.

Akin to the European code law system was the *Latin American code law system*, defined by Manzano, Conesa, and Sánchez (2014) to include processes for dealing with hyperinflation, a problem in that region for accounting and reporting. The code law

philosophy was a natural result of the colonizers like Spain, Portugal, and France, all being code law jurisdictions.

In contrast, Dayanandan et al. (2016) described the *common law system* as persisting for the historical colonies of the British Empire, including Canada, the United States, Australia, and New Zealand, as well as the empire's successor nations of the United Kingdom and Ireland. The authors characterized the common law traits to include strong regulatory protection for investors and the prohibition of asymmetric information for listed, public companies. Transparent reporting and insightful disclosures were more prevalent in the reporting. As an example, Lai and Li et al. (2013) found Australia enjoyed strong investor protection as well as robust auditing standards and enforcement, although Tarca (2012) found the disclosures biased, blaming the flexible financial standards for poor results after adopting the IFRS.

The robust the U.S. regulatory and enforcement environment was exemplary for many jurisdictions in the nascent reporting environment under the IFRS (Prencipe, 2012). While earnings management existed in the U.S. jurisdiction despite the regulatory environment, researchers recognized that quality financial reporting depended on both the standards, like the IFRS or U.S. GAAP, as well as robust laws with enforcement and penetrating audit practices to ensure consistent and comparative financial statements. Researchers focused their work on identifying the faults and weaknesses of jurisdiction that applied the IFRS to determine the root causes and effective counter measures for earnings management. For instance, Brown et al. (2014) found cross-country diversity when they measured country differences in enforcement of accounting standards as an

audit and enforcement proxy. Nobes and Perramon (2013) found firm size and national profiles of the IFRS policy choice resulted in non-comparable financial statements among small firms. The authors concluded the small firms were more likely to conform to national cultural norms than large firms in their target jurisdictions, including Australia, Germany, Spain, France, and the United Kingdom.

In addition, Dyreng, Hanlon, and Maydew (2012) found the U.S. firms with foreign operations performed more earnings management in countries with weak investor laws and protection while they minimized earnings management in nations with strong laws for investors. Prencipe (2012) found more earnings management in the domestic U.S. firms than in the U.S. multinational firms but conceded that the earnings of multinational firms primarily came from domestic operations, but the small proportion from operations in tax haven countries leveraged those nations to maximize the total, reportable earnings.

The emerging economies also struggled to deliver quality financial reporting. Hasnan, Rahman, and Mahenthiran (2013) studied earnings management and fraudulent financial reporting Malaysia vis-a-vis ten factors as indicators. The authors observed that earnings management preceded fraudulent financial reporting in some cases and acted as a leading indicator. The manager exhausted their earnings management options and resorted to fraud to sustain the ruse. The authors highlighted cultural and institutional norms in the Malaysian emerging economy that enabled and even supported low quality financial reporting, such as poor investor protection laws coupled with weak law enforcement. Bova and Pereira (2012) found another emerging economy, Kenya,

signaled interest in direct foreign investment by mandating the IFRS yet management demands alone ensured quality reporting as regulatory oversight failed.

Manzano et al. (2014) reported that Mexico exhibited a code law environment with an ineffective punitive system for securities violations. Mexico's regulatory agency failed to deter as the jurisdiction was without investor protection for non-controlling interests. Mexico was also ineffective in enforcing accounting and reporting standards. The firms domiciled in Mexico provided financial reporting of dubious quality and comparability for direct foreign investment.

### **Regulatory Enforcement**

The enforcement of preparing and publishing quality financial information proved relatively rare in published research. While the apparent deterrent environment of the U.S. jurisdiction minimized earnings management, researchers still highlighted symptoms and cases there. Cassell et al. (2013) investigated the firms receiving the U.S. Securities Exchange Commission (SEC) comment letters, evidence of proactive enforcement prevalent in the U.S. jurisdiction. The authors found a direct relationship between the comment letters and the restating of earnings, symptomatic of earnings management. Aerts et al. (2013) observed that the Australian institutional and political environment supported strong investor protection laws and robust enforcement practices for auditing financial statements. In Europe, Hitz et al. (2012) documented the enforcement of accounting standards in the German capital-market, after a decade under the mandatory IFRS reporting. Another rarity in research, Navarro-Garcia and Madrid-Guijarro (2014) found the German earnings quality was robust and it achieved the IFRS

intent for conformance to the published standards, a contradictory finding considering the research related to legal systems.

Some researchers investigated countermeasures for earnings management. Huang and Liang (2014) found industry specialist auditors helped enforce the accounting standards and reduce earnings management in Taiwan using their domestic GAAP. Nouri and Abaoub (2015) found earnings management reduced with improved investor protection using laws for analyst coverage in France, another code law jurisdiction. Reporting transparency vis-à-vis the adoption of the IFRS and the enforcement of accurate information improved the earnings quality. Jin (2013) found an inverse relationship between investor attention and earnings management around the world. In the U.S. environment, analyst attention, governance, and global audit firms sufficed, but elsewhere, only the scrutiny of institutional investors and the risk of divesting the stock reduced earnings management, irrespective of whether the IFRS or another standard governed the financial reporting.

Strict auditing standards and laws to protect the auditors who discovered problems in the accounting records and financial reporting of publicly listed firms reinforced the rights of financial statement users. Users needed to learn about the auditors' findings and leveraged the insights for their investment decision making, with examples from China (Cheng & Leung, 2012) and Europe (D'Alauro, 2013). The investor protection laws depended on their enforcement. Auditing the financial statements after preparation was an effective method for validating and certifying the preparers' compliance with the standards. The laws reduced the reporting and audit risks.

Like other investor protections, the provision for robust and aggressive auditing was not common (Brown et al., 2014). Selected nations like the United States, Canada, and the United Kingdom offered strong enforcement (Aerts et al., 2013). Conversely, many other industrialized nations and emerging economies had firm managers who delivered asymmetric financial information to their constituents. The investors struggled or even suffered with inadequate enforcement of reporting standards, a fact perpetuated or at least facilitated by weak auditing programs (Akisik, 2013).

Some researchers found selected regulatory changes increased earnings management and reduced earnings quality. Cameran et al. (2014) found earnings management increased and reporting earnings quality fell after Italy adopted the IFRS for its private firms on a voluntary basis. Enforcement gaps in monitoring the standards and the auditors performing the attestation roles enabled more manipulation than the stringent, traditional Italian standards. Hu, Li, Liu, Qi, and Tian (2012) found the Chinese government's policies induced earnings management behaviors. The managers feared that their firms would lose their stock market listing when they reported poor financial results year after year. The Chinese firms' managers resorted to earnings management to prevent de-listing. By example, Almeida and Susanlı (2012) found firms using terminations, so-called firing regulations, to manage their reported earnings and manipulate views of future earnings by reducing staff expenses timely, in emerging markets with weak labor laws. Managers took expedient actions, demonstrating the significance of the regulatory environment and enforcement on the behaviors of



managers. The managers leveraged expedient measures at their disposal to attempt to avoid the regulations and maximize reported results.

### **Corporate Governance**

*Corporate governance* represented the internal control and oversight for the operations of the businesses and firms. Huang et al. (2013) identified some attributes of governance in the U.S. firms for earnings and reporting quality, including independent board members, professional audit subcommittee membership, and policy enforcement. Huang et al. found firms with strong, governance attributes reduced the ability of managers to manipulate reported earnings through aggressive accounting practices like discretionary accruals. Kumari and Pattanayak (2014) found the boards of directors that displayed robust governance attributes mitigated earnings management through their policies and practices at selected Indian, service sector companies. In Tunisia, Chekili (2012) found only three attributes that inhibited earnings management, including the size of the board of directors, the presence of external directors, and the separation of the chief executive officer and the board chairperson. For example, Gopalan and Jayaraman (2012) examined insider controlled companies, indicating governance was not robust, across 22 nations, and they found jurisdictions with low investor protection reflecting more earnings management. Ironically, He and Yang (2014) found audit committees (so evidence of strong governance) of the U.S. firms had more success in ensuring quality earnings and reducing earnings management when the industries were targeted for regulation, receiving more than routine attention from regulators targeting them.

In Europe, researchers explored some aspects of governance and their relationship to earnings management. Hamid et al. (2014) found earnings management varied inversely with the strength of governance by performing a meta-analysis of research articles. Nicolaescu (2014) concluded the audit firm rotation practice in Italy improved both perceived and actual reported earnings quality. The authors measured quality using discretionary accruals and they attributed to the improvement to the new audit firms investigating with more rigor. Bar-Yosef and Prencipe (2013) found corporate governance increased stock market liquidity, measured using the stock price, while earnings management reduced it in their study jurisdiction, Italy. In addition, Voeller et al. (2013) found a positive, direct relationship between audit quality and corporate governance in Germany. Alves (2014) found earnings quality in Portugal, another code law jurisdiction, increased when board independence increased, meaning more independent directors and the separation of the chair and chief executive officer roles.

Some jurisdictions seemed insensitive to or unaffected by the IFRS adoption while others reflected contradictory results. Choi and Pae (2011) found Korean managers disinclined to practice earnings management, attributed to the effects of business ethics on financial reporting quality in Korea, which adopted the IFRS in 2011. The authors found Korean managers seemed culturally disinclined to abuse the flexibility provided by the IFRS. Alves and Vicente (2013) found earnings management levels similar before and after adopting the IFRS and under the various governance models allowed in Brazil and Portugal, where the authors measured earnings management as a function of discretionary accruals. Balsari and Varan (2014) evaluated published studies in Turkey

for the IFRS focused on adoption problems rather than the intended benefits. Balsari and Varan also observed that researchers found governance weaknesses and regulatory enforcement gaps since the 2005 IFRS adoption, even though capital market measures indicated increased direct foreign investment and earnings quality. The authors identified the need for additional research, indicating the opportunity for future focus on these areas.

### **Earnings Quality**

Earnings quality determined the usefulness of financial reporting. For the statement users, *quality* meant consistent reporting by firms and likely industries in conformance with the governing accounting standards, according to Lang et al. (2012). Lai and Li et al. (2013) identified reliability and dependability as attributes of statement quality. The authors expected transparency for published information instead of asymmetry. In addition, Lang et al. defined quality as statements that provided cross-country comparability when jurisdictions applied the same standards, such as the IFRS. Lang et al. measured attributes including disclosure and transparency as positive earnings quality indicators for firms from 46 countries, representing the converse of poor quality, and they measured liquidity and transaction costs, the negative results, based on levels of earnings management.

Hope, Thomas, and Vyas (2013) found the financial reporting quality of the public U.S. firms was more conservative and reflected higher accrual quality than the private, U.S. firms. Badertscher, Hribar, and Jenkins (2011) found the U.S. market's confidence varied with the quality and transparency of the financial reporting and

disclosures using the company stock price as a proxy. The authors found the discovery of asymmetric information increased the negative reaction, lowering the stock price. De Franco, Kothari, and Verdi (2011) determined that the positive U.S. earnings quality and financial statement comparability effectively invited investment analysts to use the information; the analysts signaled investors of the investment opportunity. Demerjian, Lev, Lewis, and McVay (2013) measured the U.S. earnings quality using four measures. Despite the regulatory environment and financial reporting maturity, the U.S. jurisdiction reflected multiple earnings management studies and continued to demonstrate the need for active earnings management research and measurement.

Earnings quality researchers working in emerging market jurisdictions in the global market place found evidence of problems with earnings management and the need for improvement. Khalil and Simon (2014) found the low quality financial reporting in Egypt under the IFRS, measured using discretionary accruals and income smoothing. The managers in Egyptian firms expediently tailored policy choices to short term objectives using the flexibility allowed by the IFRS. Khalil and Simon found the Egyptian managers manipulated the reported earnings with the insufficient investor protection laws and ineffective enforcement in Egypt. Similarly, Ahmed and Azim (2015) found earnings management behaviors among managers of the cement industry of Bangladesh highly manipulative; they drove low quality financial and earnings information by publishing highly volatile revenues and operating profits. The emerging markets failed to provide adequate oversight to enforce the standards and protect the capital market participants.

Liu, Yao, Hu, and Liu (2011) found earnings quality reportedly improved after the adoption of the IFRS in China, a notable regulated market, to highlight the results and differences versus the free market adoptions. Indicative of problems in preventing earnings management, Ke, Lennox, and Xin (2015) found that the global audit firms operating in China delivered lower reporting quality than in other jurisdictions, yet China refused access by the U.S. Securities Exchange Commission for investigation. Fan, Thomas, and Chong (2015) found reduced quality vis-à-vis increased discretionary accruals to avoid China's regulatory benchmark for reporting reduced income year over year.

Akin to this work in two common law nations, Tarca (2012) analyzed earnings management measurement processes for Australian firms and highlighted the weaknesses and inconsistencies of the approaches in that jurisdiction. Similarly, Boubakri (2012) found the earnings quality and persistence drove improved value relevance for Canadian financial reporting following the IFRS adoption.

Some but not all European jurisdictions reported improved earnings quality under the IFRS in selected circumstances. Zéghal et al. (2012) found applying the IFRS in 15 European Union countries improved earnings quality and reduced the earnings management, indicated by higher timeliness, conditional conservatism, and the value relevance of accounting numbers. On the other hand, Lai and Li et al. (2013) viewed value relevance at odds with earnings quality. The authors found the fair value under the IFRS caused earnings volatility, impairing consistency and comparability. Christensen et al. (2015) found financial statement quality improved with the adoption of the IFRS for a

sample of German firms. The authors also found financial statement users perceived lower uncertainty with the information generated by companies in compliance with the IFRS and that improved transparency reduced information asymmetry with better disclosures, primarily with larger companies. Fok and Franses (2013) found strong evidence of earnings management by disaggregating annual reporting by quarter. They found differences between the income statement of the last fiscal quarter versus the structure of reported earnings of the three earlier quarters. The researchers listed above continued to find earnings quality issues.

Hellman (2011) found the voluntary adopters in Sweden leveraged the flexibility of the IFRS to manipulate reported earnings. Cameran et al. (2014) found the privately-held, Italian companies voluntarily adopting the IFRS and manipulating earnings more than previously under the Italian GAAP. Campa and Donnelly (2012) found earnings quality increased among public firms in Italy with the adoption of the IFRS, but the quality fell in the United Kingdom as managers used the new flexibility allowed to manipulate their results using normal decision space under IFRS. Nouri and Abaoub (2015) found reduced earnings management due to improved investor protection laws for analyst coverage in France. Reporting transparency vis-à-vis the adoption of the IFRS combined with the enforcement of standards improved the earnings quality. The research showed positive earnings quality in many cases but raised the question about pervasive sustainable earnings quality in the European Union.

The level of earnings management research activity proved insufficient in the European Union, offering a few additional insights. Huifa, Qingliang, Yihong, and Zhijun

(2010) found the reporting quality improved regarding earnings management using accruals and target achievement, but smoothing and timely loss continued problematic methods still visible across 15 European Union nations under the IFRS. Marra and Mazzola (2014) found indications that earnings quality improvements under the IFRS in Italy were transitory, that firms would leverage needed tools to deliver needed reported results, resorting to earnings management when managers and owners determined it, highlighting the need for ongoing earnings management analytical and detection tools. Akisik (2013) studied accounting regulation, financial development, and economic growth in 51 countries in both industrial and emerging markets. Akisik found increased regulation of financial markets improved the earnings quality and confidence for direct foreign investment by outside interests, a challenge area particularly for code law nations like France, Spain, and Italy.

### **Comparability**

Financial statement comparability depended on both the quality of financial reporting and the similarity of policy choices allowed and available within the standards. De Franco et al. (2011) investigated financial statement comparability in terms of usable metrics and empirical analytical techniques. The authors cited comparability as one of the three qualitative factors in the Conceptual Framework of the U.S. GAAP in addition to relevance and reliability, yet they conceded that the standards omitted defining usable metrics. Yeaton (2015) observed that the U.S. GAAP included industry centric procedures and basic valuation choices that rendered comparability dependent on analysis

and translation between companies of disparate industries, hence the importance of the U.S. transparency expectations and disclosure rules.

Ilter (2011) analyzed the value and earnings overstatement using the IFRS in the highly inflationary Malaysian environment on the financial statements of the U.S. parent companies. The International Accounting Standards 29, Financial Reporting in Hyperinflationary Economies, disallowed correcting entries. The alternative, the International Accounting Standard 21, Effects of Changes in Foreign Exchange Rates, also failed to remedy the cross-country translation for decision usefulness. Comparability became a function of the clarity of assumption and policy disclosures documented to facilitate needed reporting for and consolidation of a subsidiary with the parent firm.

Yip and Young (2012) found the IFRS in the European Union significantly improved information comparability in 17 European countries. The authors employed three proxies to measure information comparability: (a) the similarity of accounting functions that translated economic events into accounting data, (b) the degree of information transfer, and (c) the similarity of the information content of earnings and of the book value of equity. The authors' results suggested that mandatory the IFRS adoption improved cross-country information comparability by making similar reporting events look more alike without making different events look less different.

Brochet, Jagolinzer, and Riedl (2012) focused their studies of earnings quality in the United Kingdom, finding the comparability of the information effective among firms. They also found cross-company comparability supplanted the need for evaluating the individual firms' core information quality, meaning comparability proxied quality and



external reliability. Brochet et al. also found the capital markets accrued benefits from the transparency, and the examination method supplanted the likelihood of information asymmetry and the insider issues of privately available information. Platikanova and Perramon (2012) found the IFRS adoption transition period in Europe's capital markets volatile for investors due to restatements from the prior standards to the IFRS.

Notwithstanding the volatility, the authors concluded that the IFRS improved disclosure, and with it, industry level and the cross-border comparability of financial statements.

Conversely, Bahadir and Tolga (2013) found the accounting policy choices left the comparability of the statements for firms in Turkey impaired for 11 areas in the IFRS, such as the choices available for valuing investments and impairing the property, plant and equipment. While most researchers found improved comparability with the IFRS adoption in the European Union, many of the jurisdictions transitioned from dissimilar domestic standards. Notwithstanding the prior state and the findings, researchers found the exceptions under the IFRS persisted to undermine the intended level and perception of quality.

### **Benchmarks: Zero, Prior Year, Target, and Budget**

Some firms manipulated reported earnings to achieve benchmarks important for the investors, analysts, managers, lenders, and other firm stakeholders. Li (2014) investigated earnings management for targets or benchmarks and found the cut-off points to be a discontinuity or gap in the earnings distributions in his analytics. Payne and Thomas (2011) identified three thresholds for earnings management, including zero earnings; avoiding a loss, expected or target earnings, and the prior year's earnings level.

However, Payne and Thomas largely refuted the consequence view that labeled missing the benchmark a figurative torpedo that reduced stock prices as they found little evidence or correlation. Conversely, Parker, Pate, and Guidry (2014) found earnings management among the U.S. firms that manipulated the pension expense to beat zero earnings as a benchmark or target. Liu and Sun (2013) found evidence Canadian mining firms resorted to earnings management to achieve prior earnings levels with the more restrictive accounting standards under the IFRS after the 2011 adoption. Fan et al. (2015) found managers of Chinese firms failing to achieve minimum regulatory financial performance benchmarks manipulated earnings to achieve the benchmarks to avoid government mandated delisting of public companies at risk of failure. Dierynck, Landsman, and Renders (2012) studied firms where managers manipulated their labor cost via seasonal terminations to achieve earnings benchmarks using real earnings management behaviors. Ferreira, Carvalho, and Pinho (2013) found managers using discretionary accruals for earnings management to meet market expectations and avoid losses in Portugal.

Contrary to many findings, Huifa et al. (2010) found the reporting quality improved regarding earnings management. The authors found European firms not using target achievement across 15 European Union nations reporting under the IFRS. The researchers also found that earnings management for delayed loss reporting and smoothed earnings persisted. The specific benchmarks varied among firms, but researchers found cases in many jurisdictions where managers reached a targeted or expected earnings level using earnings management. The scarce European inquiry

combined with the diverse findings highlighted this area as a target for additional research.

Another counterpoint came from Manzano et al. (2014). The authors found reduced earnings management when they studied capital market attributes with the IFRS for financial reporting in Mexico. The authors concluded the IFRS provided higher quality reporting for earnings. The authors found reduced earnings management in Mexico for non-controlling investors. Manzano et al. described Mexico as an emerging market with a code law environment of low standards' enforcement and minimal investor protection regulations.

### **Conservatism**

The concept of conservatism was divisible into two aspects, the short term and the unconditional forms. The principle of *short term conservatism* was foundational for reporting quality under the U.S. GAAP and Canadian GAAP for the support of historical cost and the restraint in estimates, forecasts, and accruals (Scott, 2014). In their seminal but separate works from a different viewpoint, both Hofstede (1983) and Gray (1988) determined that *unconditional conservatism*, common to code law jurisdictions, integrated a bias for financial understatement in both the operational earnings and the financial position. Salter Kang, Gotti, and Doupnik (2012) determined that social values and institutions of selected jurisdictions played a role in setting the accounting values and determining the accounting conservatism, hence the challenge of eliminating the accounting traditions around unconditional conservatism with its non-disclosure and asymmetric information in many European jurisdictions.

Conversely, Choi and Pae (2011) found the cultural and business ethics in Korea drove high quality financial reporting through increased, short term conservatism. The ethical and conservative Korean managers were less likely to abuse the IFRS flexibility and to manipulate discretionary accruals. Artiach and Clarkson (2014) found high information quality, such as high transparency and low information asymmetry, supported a strong causal relationship for a reduced cost of capital while earnings management demonstrated less conservatism and information quality increased the cost of capital. Artiach and Clarkson concluded the U.S. short term conservatism served a positive role in accounting principles and practices, despite its increasing rejection by accounting standard setters in favor of fair value, a source of manipulation labeled the IFRS flexibility. The multiple facets of conservatism represented some obstacles for resolving the risks of earnings management despite the positive influence of the other facets.

### **Real Transaction Management**

Managers risked sub-optimizing the long term potential of their firms by deferring costly strategic and tactical projects to maximize the current, reported earnings. Chen, Huang, and Fan (2012) identified real transaction management activities to include changing credit sales terms, reducing the cost of sales by increased production to inventory, and changing the schedule of advertising programs, research and development projects, and other strategic work to defer or accelerate related expenses. Liu et al. (2014) found the manipulation of research expense more likely in Germany under the IFRS than in firms using the U.S. GAAP, flagging real transaction management as the source. Chen

et al. found a complementary association between real transaction management activities and accruals-based manipulation in earnings reporting in Taiwan, developing the complement hypothesis to explain the simultaneous application of real transaction management and discretionary accruals management for manipulating financial results.

Badertscher (2011) identified real transaction management in the U.S. firms with overvalued stock where managers manipulated the timing of real events in addition to manipulating accruals. Kang and Kim (2012) found corporate governance deterred real transaction management activities in Korea. Burnett, Cripe, Martin, and McAllister (2012) analyzed real transaction management versus accrual earnings management processes in the U.S. firms and the relationship of the process choice to the audit quality. The authors found robust auditing drove managers to practice real transaction management using stock repurchases when measures like the earnings per share ratio needed to increase to meet their short term targets. Chi, Lisic, and Pevzner (2011) found the U.S. firms with high quality audits performed by global firms used real transaction management. The managers viewed the accounting was defensible, versus audits by non-global firms where managers used discretionary accruals where their auditors did or would not detect the manipulation. Even so, Herda, Dowdell, and Bowlin (2012) found audit firms increased risk assessments when they detected or perceived that a firm's managers manipulated reportable results through real transactions.

Chan, Yuen, Zhang, and Zhang (2014) found the earnings management in China occurred using real activities as well as recording dubious operational costs. Among Chinese real estate firms, the authors also found cash flow reporting manipulation as

well. Conversely, Bova (2013) found earnings management in the U.S. firms to manipulate labor unions contract negotiations. Bova found the managers manipulated earnings downward to falsely even fraudulently signal a negative, economic outlook to force the union to make concessions. The managers' behavior was unaligned with the long term strategy and its optimization of resources and shareholder value when the management manipulation using real transaction management improved the managers' short term performance measures. The managers' behavior overshadowed the long term maximization of investor results by sub-optimizing the firm's earnings over time.

### **Classification Shifting**

The *misclassification* of transactions obscured long term, recurrent costs to overstate future potential earnings and cash flows. McVay (2006) prompted earnings management testing and insights by identifying the misclassification of recurrent items as non sustaining in the financial reporting of the U.S. firms. McVay found managers driving optimistic forecasts of earnings and cash flow in future periods. Abernathy, Beyer, and Rapley (2014) studied the U.S. firms using earnings management through classification shifts, combining this third earnings management approach with real transaction management and accruals earnings management. Class shifts avoided the cash visibility and provided avenues when avoiding analyst cash forecast scrutiny. Lee (2012) focused on the cash attributes of manipulation through classification switching, which included timing cash events to achieve insider targets like earnings, debt ratios, and the cash flow from operations.

Businesses managers in the United States and Europe leveraged misclassification to maximize apparent results and potential of their firms. Haw, Ho and Li (2011) studied misclassifying selected negative, operational items as non-sustaining to improve the U.S. firm and stock price values. The researchers studied cases of manipulation for costs of discontinued operations, casualty losses, pension liabilities, and other special items. Mitra, Hossain, and Jain (2013) evaluated the steps taken by managers of the U.S. firms to leverage product launch programs and avoid earnings disappointment by capitalizing instead of expensing period costs, shifting the cost classification from expense to intangible assets. Gujarathi (2015) found cost classification shifting at one U.S. firm, Diamond Foods, Inc., and the regulatory consequences for earnings manipulation. Haw et al. found firms in East Asia understated the going or recurrent expenses to make future profits more attractive by shifting their classification. Pioneering new ground, Behn, Gotti, Herrmann, and Kang (2013) found classification shifting in 40 countries with differing levels of investor protection. The authors found the sampled jurisdictions within the European Union reflected the classification shifting despite the IFRS requirements for financial statements, indicating firms manipulated the core or operating earnings while also promoting the need for further research.

### **Disaggregation**

The *disaggregation* of financial statements improved transparency through the details disclosed in additional line items (Bonner, Clor-Proell, & Koonce, 2014). Libby and Brown (2013) found financial statement disaggregation decisions at the U.S. firms improved disclosure but also lowered the auditors' tolerance for misstatement; errors

became material in proportion to the smaller line items in disaggregated statements. Bonner et al. also found the flexibility for managers to determine the disaggregation of financial statements under the U.S. GAAP enabled even choosing when and what to summarize versus disaggregate, facilitating inconsistently disclosing details unless pressured for transparency by the stakeholders, including regulators.

Lansford, Lev, and Wu Tucker (2013) studied the causes and consequences at the U.S. firms of disaggregating earnings. The authors found the disaggregation deterred earnings management by making it more identifiable and improved the capital market information vis-à-vis the transparency. Amir, Einhorn, and Kama (2014) confirmed an inverse relationship between disaggregating the financials and earnings management. The authors found disaggregation disclosed information that reduced earnings management by decomposing elements that otherwise hid earnings management symptoms. Similarly, but on a narrower scope, Cready, Lopez, and Sisneros (2012) disaggregated the special item charges to analyze manipulations, also indicating transparency improvements and earnings management deterrence. Disaggregation was found to deter earnings management in the U.S. firms and offered the same potential to reduce earnings management under the IFRS, not illogical considering the emphasis on disclosure.

### **Special Items Including Intangibles**

Cready et al. (2012) studied special charges under the U.S. GAAP and their relationship to improved profits in subsequent fiscal years. Lee (2014) found the enforcement of the U.S. standard, Statement of Financial Accounting Standard 146, Accounting for Costs Associated with Exit or Disposal Activities, reduced the propensity



to arguably shield profits or smooth earnings using the restructuring charges and discontinued operations costs historically abused to defer profits. Cready et al. considered a range of special items, adding asset write-downs and goodwill impairments to the known special items manipulated for earnings management. In addition, Ramanna and Watts (2012) found evidence for unverifiable estimates in required goodwill impairment costs under Statement of Financial Accounting Standard 142, Goodwill and Other Intangible Assets. Cready et al. found that the reduced profits for a selected period by recording additional special charges preceded periods of significantly higher earnings. The authors found the special item costs accelerated expensing existing assets by changing prior estimates of annual accrual amounts. By example, effective discretionary book entries adjusted the long term asset depreciation or amortization and current asset contra accounts for inventory obsolescence and trade receivable bad debts. The book entries were special items increasing or decreasing earnings.

Furthermore, Krishnan and Wang (2014) found managers at some U.S. firms manipulated earnings by leveraging capitalized software development costs under the Statement of Financial Accounting Standard 86, Accounting for the Costs of Computer Software, despite the increased audit risk for dubious transparency in disclosures and the quality of estimates for expense accruals. On the liability side, Parker and Swanson (2012) found the variable annual adjustments of pension and postretirement benefits accounts provided options for manipulation which was substantiated by varying rates of return and annual need estimates to beat market expectations for earnings. Abernathy et al. (2014) found managers at some U.S. firms combined the authentic special items

accounts with misclassification of recurring costs, enabling them to orchestrate earnings management but also avoid easy detection. Hsu and Kross (2011) studied the market view of special items and the managers' manipulation disclosing them. The investors might proceed to classify the costs as non-recurring for improving forecasts of a firm's long run earnings, cash flow and valuation, effectively facilitating earnings management through shifting items.

In the European Union, D'Alauro (2013) selected firms from two distinct jurisdictions with different legal systems and accounting traditions, demonstrating that the flexibility of the IFRS enabled earnings management. D'Alauro found the liberal requirements in International Accounting Standard 36, First Time Adoption of the IFRS, facilitated a wide range of expense levels with non-verifiable calculations when determining the goodwill impairment. D'Alauro also found the misstatement of such items enabled British and Italian firms' managers to manipulate reported results. Some nations and firms adopted the IFRS earlier than required to gain the benefits (Alon & Dwyer, 2014). The reductions in earnings facilitated figurative saving of unreported earnings for future periods to meet targets. The authors reported that the managers justified the reserves by viewing current targets as met. Similarly, Alves (2013) found managers in Portuguese businesses expediently manipulated the Goodwill valuation to manage their earnings under International Accounting Standard 36 and International Financial Reporting Standard 3, Business Combinations; the managers abused the available flexibility in their accounting. While the IFRS offered reporting and accounting

flexibility, the U.S. standards, in contrast, attempted to redress the financial manipulations for distorting the earnings; as such, an area of research persisted.

### **Accrual Anomaly for Earnings Management**

Sloan (1996) defined the *accrual anomaly* as the discontinuity between earnings and cash flows caused by accruals in his seminal work. Sloan found the U.S. investors misunderstood earnings and they misunderstood the *earnings persistence*. The latter represented the sustainability of earnings as a trend into the future. The author viewed the accrual anomaly as the combined effect of accruals and cash flow on the investors' perception of company value, which the investor demonstrated vis-à-vis the price paid for shares of stock. Sloan found many investors proved oblivious to the sources of earnings as cash versus accruals, (also described as real versus reported earnings, respectively). The managers could manipulate the reported earnings using discretionary accruals. Another seminal work by DeAngelo (1988) discussed earnings management modeling for discretionary accruals, which the author developed to investigate bad debt reserves in the U.S. firms.

While most researchers viewed manipulative accruals collectively, Teoh, Welch and Wong (1998) focused on abnormal accruals for earnings management, differentiating them versus discretionary accruals. They concluded abnormal accruals flagged the manipulation while the discrete approach provided by discretionary accruals inferred it. Most earnings management research labeled the manipulated accruals discretionary and avoided the attempted refinement. In yet another research effort, Richardson et al. (2006) confirmed that accruals distorted the reported earnings, finding that the accruals did not

relate to the selected the U.S. firms' sales growth. These authors figuratively pioneered the concepts and modeling for finding symptoms of earnings management by manipulating accounting and reporting using accruals in a longitudinal study.

The research community subjected groups of industrial nations to analysis for earnings management symptoms. earnings management using discretionary accruals was present in many jurisdictions based on exploratory surveys. Peek, Meuwissen, Moers, and Vanstraelen (2013) found evidence of earnings management in firms from nine countries using two models for the accruals anomaly. The nine nations included non-European and Anglo, common law nations (including the United States, Australia, and Canada), European Union nations (including the United Kingdom, Germany, France, Italy, and the Netherlands), and Japan. The authors of this 20-year, longitudinal study included European information reported under the IFRS from 2005 to 2009, using the nascent IFRS reporting to explore and study the earnings management attributes of accruals.

Buhr (2012) found earnings management symptoms in the accruals of Anglo-American government entities in five jurisdictions, supporting the view that the common law nations shared the earnings management tradition of discretionary accruals with code law jurisdictions. The author found some differences in approaches and results. The five nations included the United States, Canada, Australia, New Zealand, and the United Kingdom. Aerts et al. (2013) found an inverse relationship between discretionary accruals and thorough disclosures using management commentaries in the published financial statements, whether required or optional. Standards like the IFRS allowed and

avored the management commentaries, but the disclosure was optional under the IFRS while required in the other nations' sample of firms. The firms of the United States and Canada conformed to the domestic GAAP while the firms in the United Kingdom and Australia applied the IFRS. However, most of the financial information subjected to analysis in European firms predated the IFRS adoption of the European jurisdictions now using the IFRS, leaving more earnings management accruals research needed for reporting in conformance with the IFRS.

**U.S. cases.** Significant numbers of researchers expanded the nascent approaches of the seminal works and developed more concepts and models for earnings management using accruals in the United States. Beneish et al. (2013) investigated the U.S. firms demonstrating earnings manipulation for expected returns using aggressive accounting policies but creating working capital bloat and other symptoms. The authors also found selected industries struggling against harsh economic conditions were more likely than others to employ earnings management. Beneish et al. (2012) examined the distressed U.S. firms where artificially inflated earnings supported insider selling of stock holdings in advance of eventual public default on debt. The authors found asymmetric information available to the insiders who used accruals to manipulate reported results. Dechow et al. (2012) detected earnings management in the U.S. firms using accruals to offset lower than expected earnings using a longitudinal approach instead of the cross-sectional method.

The U.S. deterrence of earnings management appeared effective under limited circumstances. Wongsunwai (2013) found fewer symptoms of earnings management

from accruals and real transaction management. Regulators performed external monitoring of the U.S. initial public offerings, where private firms went public, compared to a control sample of normal firms. Cao, Myers, and Omer (2012) found ethics and governance deterred the use of discretionary accruals for earnings management. The author found the reputation of the U.S. managers mattered for financial reporting quality and financial restatements marred their reputation. Such admired managers supported comprehensive audits and expanded governance.

**Cases outside of the United States and Europe.** Researchers explored earnings management using accruals in jurisdictions around the globe but outside of the European Union. Boubakri (2012) found evidence of earnings management using accruals quality, earnings persistence, and accruals anomaly in the Canadian context. Li et al. (2013) found managers of firms in Taiwan employing earnings management to ensure meeting the expectations for corporate performance, and the managers avoided earnings shortfalls versus targets and benchmarks. Bhuiyan, Roudaki, and Clark (2013) found evidence of earnings management in New Zealand using the measure free cash flow for an indicator of discretionary accruals rather than cash flow from operations. *Free cash flow* measured the excess of cash from operations less the cash paid for operating assets. Manyara and Benuto (2014) found accountability for Australian financial reporting improved as firms garnered foreign investors and participated in foreign capital markets, as oversight by regulators and shareholders constrained earnings management behaviors. Chen et al. (2012) found complementary associations between real activities and transactions versus accruals for manipulating earnings reporting in Taiwan. The authors determined that the

firms' managers applied multiple techniques. Goel (2012) found earnings management in Indian firms using accruals, which he stratified as three categories to denote the quality of the logic for making the discretionary accrual.

Despite the stated IFRS goal of improved transparency, researchers found earnings management continuing after adoption. Lai and Li et al. (2013) found the quality of accruals fell in the Australian jurisdiction after the mandatory adoption of the IFRS in 2005. The authors also observed that the financial reporting relevance and reliability improved despite the effects of the IFRS on the accruals for working capital, non-current operating accounts, and financing accruals. Govendir and Wells (2014) found accruals enabled more earnings persistence and less earnings volatility in Australian firms. The authors disaggregated the accruals as leading or lagging cash flow indicators as well as whether the accruals were the initial or reversing entries. They might understand the continuing or residual effect of accruals on the accounting income. Da Silva, Weffort, Flores, and Da Silva (2014) found earnings management using discretionary accruals more pervasive in Brazil during and following the 2009 economic crisis than during prior, economically stable years, and Brazil adopted the IFRS in 2010. The IFRS did not disrupt earnings management absent regulatory oversight.

**European cases.** The jurisdictions in the European Union offered little research concerning earnings management using accruals since the mandatory adoption of the IFRS in 2005. Dayanandan et al. (2016) identified symptoms of earnings management where management discretion used flexibility of accruals in European firms in jurisdictions displaying the code law accounting tradition. The tradition reflected

concentrated ownership and the permanent conservatism to protect insider interests, most particularly the owners and possibly lenders who required owners to meet restrictive provisions of debt obligations. Miková (2014) found income smoothing as an effect of discretionary accruals in selected jurisdictions. Alves (2012) confirmed that discretionary accruals in Portugal manipulated reported earnings where ownership concentration and managerial ownership, (also called *entrenchment*), facilitated insider action and the publication of asymmetric information to non-controlling interests (Goncharov, Hodgson, Lhaopadchan, & Sanabria, 2013). Other research of Europe combined non-European jurisdictions for contrasts and insights, like Peek et al. (2013) and Brown et al. (2014). However, the relatively brief list indicated a need for both broader and deeper research efforts.

### **Tax Accruals**

Tax accruals offered distinct attributes in many (national) jurisdictions where regulators enforced book-to-tax conformity. The book to tax conformity meant the financial statements provided accounting and taxable income, unlike the United States, where the book-to-tax differences required an expected reconciliation. Comrix, Mills, and Schmidt (2012) found the U.S. quarterly tax accruals indicated symptoms of earnings management. The authors tracked systematic differences versus the annual effective tax rates. The authors identified cases where managers manipulated tax calculations to deliver expected results on the interim or quarterly reports. Blaylock Shevlin, and Wilson (2012) also found the book-to-tax accrual differences for the U.S. firms. The authors



differentiated between firms with strategic tax plans and those manipulating results, generally limited to timing differences.

Blaylock et al. (2012) found accruals deferring or accelerating earnings resulted in the temporarily manipulated earnings. Chen, Gaviious, and Yosef (2013) found earnings management in Israeli firms where book-to-tax conformity existed at moderate levels. The authors noted that book-to-tax pressed managers at firms to trade-off between tax and book or accounting income management while jurisdictions with non-conformity allowed and enabled firms to manage the two earning types independently. Chen and Gaviious et al. found managers at firms did not always manage both tax and book income, but often manipulated only the book income. Atwood (2014) found the European book-to-tax conformity issue related to earnings management. Atwood focused his work on discretionary accruals under the IFRS as a strategic source for optimizing the reportable earnings for investors and tax authorities. Watrin et al. (2014) also found earnings management symptoms in Europe. The authors compared jurisdictions with high versus low levels of book-to-tax conformity and found more downward earnings management in the one-book, high conformity jurisdictions than in the alternate jurisdictions of lower book-to-tax conformity. While some research options persisted, the European book-to-tax conformity manipulations were effectively another discretionary accrual subjected to manipulation.

### **Restatements**

Restatements indicated that managers changed reported earnings and financial position, whether voluntarily updating already published information or conceding to

regulatory demands to reissue the reports. Whether resulting from enforcement action by regulators or a disclosed discovery by managers, the methods and formality of restatements varied from virtually invisible or so-called stealth restatements to highly visible, publicized changes, as Loyeung et al. (2016) found in Australia. Donelson, McInnis, and Mergenthaler (2013) observed that the U.S. investor protection laws dictated the formal processes based on the appearance for or determination by regulators. In the European Union, Hitz et al. (2012) found the regulators of the European Commission expected certain consistency across all their members' jurisdictions, but the activity proved rare. Researchers rarely documented restatement events in published research reports about restatements in Germany. Platikanova and Perramon (2012) addressed the IFRS restatement, but they focused on the adoption period when managers at firms restated their prior period in comparative financials for the published statements.

**U.S. restatements.** The U.S. jurisdiction was most aggressive in addressing the restatement of published financial statements versus its global trading partners using the IFRS or their own domestic GAAP. Akin to the integral view of disclosure and transparency for the awareness of decision quality information, the Securities Exchange Commission enforced the publication of restatements based on its assessment of the materiality of the change (Donelson et al., 2013). In other cases, restatements were voluntary, identifying and publicizing internal discoveries by firms motivated by ethics or compelled by policy to disclose changes to the financial reporting, sometimes due to earnings management and other times due to errors (Bardos & Zaiats, 2012).

Restatements of published financial statements signaled the capital markets that decisions already made used incomplete and inaccurate information.

Numerous researchers investigated varied aspects of the U.S. financial reporting restatement. Files, Sharp, and Thompson (2014) found some U.S. firms restated their earnings for multiple years as earnings management behaviors recurred, using various methods. Burks (2011) investigated the proliferation of the U.S. financial restatements after implementation of the Sarbanes Oxley Act of 2002. The causes matched the historical norms for both errors and earnings management remedies, but for smaller magnitude adjustments due to the provocative regulatory change. Perhaps unsurprising, Wiedman and Hendricks (2013) found earnings management abated in the U.S. firms in fiscal reporting periods following restatements as the firms' earnings and accrual quality improved. The authors found new leadership, upgraded governance, and increased auditor and regulatory scrutiny contributed to the improvements. Carcello and Li (2013) found accountability for earnings quality improved with the requirement of audit partner signature on audit reports, a U.S. regulatory proposal already required by selected European nations. Kuang et al. (2014) found that earnings management was more prevalent where governance allowed the involvement of the chief executive officer in board member selection. The authors used restatements as proxies for the earnings management events with the sampled U.S. companies. The authors also observed the stock prices fell more dramatically for restatements when the fault included the lack of board independence.

Bankley, Hurtt, and MacGregor (2012) found an inverse relationship for increased auditing costs versus improved financial statement quality, using restatements as the proxy for the inverse quality measure. The authors found increased fees for audit effort reduced the propensity for restating financial reporting. Further, the authors determined that abnormally high fees paid by non-restating businesses were paid in response to identified and addressed audit risks, where U.S. investor protection provided civil relief.

Restatements indicated new information for shareholders and other statement users, but restatements also often meant the financial results were often lower than previously reported. Sletten (2012) found the stock prices varied with the quality of discretionary disclosures by the U.S. firms. Sletten used restatement announcements to signal a negative disclosure event for stock price reductions. Bardos et al. (2013) found the negative U.S. market reaction to restated financial results reduced the stock price an average of 9.2% and expected litigation costs represented about half of the capital value. The authors labeled the effect the cumulative abnormal return and found substantive accounting errors related indirectly when the return was negative.

In other research related to the market reaction, Bizarro, Boudreaux, and Garcia (2011) found restatements followed disclosures of material internal control system weaknesses. The authors found the low accounting quality reduced reporting quality, and the firms published materially incorrect financial reports. In another case, Ettredge, Huang, and Zhang (2013) found a sample of the U.S. firms that issued restatements reduced their disclosures, especially their voluntary, forward looking comments for earnings forecasts for the capital market. The U.S. researchers highlighted many example

cases and explored numerous restatement issues and implications for the U.S. capital market and its financial information users.

Some research of the U.S. restatements seemed to unsuccessfully pursue prior concepts as their new work failed to substantiate the case. Bardos and Zaiats (2012) found the selected U.S. businesses that restated earnings subsequently issued equity or debt securities. The authors suggested that the managers manipulated earnings to both maximize the stock issue price and minimize their cost of the capital acquired. The authors found the low frequency of 15% of restating firms combined with the minority that understated the earnings presented a weak argument for an earnings management hypothesis from Teoh et al. (1998). Teoh et al. hypothesized investors reacted myopically to overstated earnings based on accruals without regard to validating the underlying assets as real cash. Such investor views made them easy victims of earnings management.

The U.S. regulators demanded that some firms publish restatements where the information change was sufficiently material to meet regulatory guidelines. Donelson et al. (2013) investigated firms forced to restate the earnings by the U.S. legal action, labeled an enforcement action, while the prior research cases explored voluntary restatements. Carcello et al. (2011) found the restatements caused consequences for firms forced to restate financial statements by civil or regulatory actions. Donelson et al. evaluated the level of change for restatement and compared the restated amount to benchmarks, including analyst forecasted earnings and the prior year reported earnings, to determine a severity assessment. The authors labeled significant changes as *discontinuities*. Arnold and Harris (2012) studied 100 public firms publicized for

malfeasance and restatements in the United States, the sample firms guilty of earnings management using overstated revenues. Files et al. (2014) found restatements followed one or more fiscal periods of earnings management. The managers failed to hide their manipulations and had to publish restatements.

**European restatements under the IFRS.** Researchers focused little attention on restatements in the IFRS jurisdictions. Hitz et al. (2012) identified cases where German companies restated published financial statements. Regulators enforced action by the firms vis-à-vis their domestic oversight agencies after years under the mandatory the IFRS in the European Union. Germany was the only European jurisdiction addressed in restatement literature, yet the report indicated earnings management as a basis for some proportion of actions, and error corrections provided for the other restatements (Strohmeier, 2014). Loyeung et al. (2016) found large scale restatements in Australia at the time of the IFRS adoption due to accounting errors in the first reporting year under the IFRS, due to the failure of the firms' managers to prepare and train for the accounting changes. While restatements received significant attention in the U.S. jurisdiction, other global, industrial economies lack published research and reporting. The lack of restatement attention in the IFRS jurisdictions suggested this area deserved additional inquiry and research.

## **Review of Research Methods**

### **Introduction to Research Methods**

Earnings management researchers in the United States investigated a multitude of earnings management aspects, but few researchers in Europe and other regions tested the

IFRS financial statements. Researchers applied many models and approaches to identifying earnings management events and symptoms in the U.S. published financial reports. In addition, Donelson et al. (2013) highlighted the publicity around the U.S. earnings restatements that signaled the capital markets' investors and researchers that the firms with restated earnings might provide earnings management insights.

Earnings restatements proved elusive in Europe as in Australia since the managers of the restating firms limited publicity and provided little visibility. Hitz et al. (2012) analyzed the cases of German restatements made visible by their regulatory enforcement, an exceptional visibility in the European Union. Loyeung et al. (2016) found restatements using published reports in multiple years. The identification of financial restatements resided in the comparative financial statements. The researchers found changes to a published year by comparing the next year's report to the prior year's republished information.

Restatement research in the U.S. environment was an overt option due to the disclosure regulations while such research elsewhere tended to be indirect and a function of discovery processes. In selected cases, Hollie, Livnat, and Segal (2012) investigated symptoms of earnings management where they found undisclosed restatements by the U.S. firms that were largely unpublicized. The managers found a basis or cause for changing the preliminary earnings releases, which were accurate in the U.S. regulatory reporting, like the Securities Exchange Commission regulatory annual reports, called the *10K filings*, as well as the published financial reports. Similarly, Payne and Thomas (2011) identified evidence of earnings management using earnings benchmarks and

smoothing, which provided them the signals for manipulation that highlighted study cases.

### **Models for Identifying Earnings Management**

Models for detecting the existence of earnings management or at least the symptoms of alleged earnings management used multiple approaches. Arnold and Harris (2012) categorized the sources or forms of earnings management among the U.S. firms. The authors leveraged the Jenkins Report (American Institute of Certified Public Accountants, 1994), which recognized earnings management forms based on manipulating estimates for routine events, accruals for special events, schedules for real transactions, assumptions for fair valuation, and policies for the accounting methods. Gerakos (2012) detected earnings management using accruals levels as a measure of severity in his study of the U.S. firms. For their work in Korea, Choi and Pae (2011) used a model proffered by Jones (1991) focused on discovering discretionary accruals. Goel (2012) found earnings management in Indian studies using a model from DeAngelo (1988) for isolating discretionary accruals used for increasing the reported income. Patro and Pattanayak (2014) evaluated Indian earnings management using models from the works of Jones and DeAngelo for accruals at Coal Limited before the IFRS adoption. Lang et al. (2012) tracked earnings management in 46 countries using smoothing, earnings concealment, and earnings targets, that is, small loss avoidance, all based on accruals versus cash flows. Rudra and Bhattacharjee (2012) found evidence of earnings smoothing in India, leveraging the policy flexibility available after the adoption of the IFRS. The variations in the symptoms of earnings management, premised on the



creativity of the managers designing the programs, required disparate approaches to detection, but the concepts and proxies developed for detecting the U.S. instances of earnings management proved useful in the IFRS environments.

Another approach that enabled researchers to identify earnings management cases involved tracking and analyzing broad, financial symptoms. Amir et al. (2014) tracked earnings management based on forecasts, applying a model from Fischer and Verrecchia (2000) for correlating forward looking information on earnings and company value to market stock price projections. Comprix et al. (2012) found the U.S. firms manipulating tax rates by tracking effective tax rates quarterly. Abernathy et al. (2014) found the U.S. firms reclassifying costs as non-sustaining or non-recurring financial statement items, manipulating the perceived future valuation and earnings streams. Financial analysts tended to exclude the non-recurring items as isolated and atypical events. Cready et al. (2012) found managers at the U.S. firms using special item accounts like discontinued operations for misclassifying unrelated costs. Ramanna and Watts (2012) found some U.S. managers manipulating Goodwill valuation to facilitate desirable reporting. Although most earnings management models came from the U.S. studies, the few researchers exploring earnings management in European reporting under the IFRS would also detect the earnings management using the processes and models applied to the U.S. capital market environment and the firms therein.

**Longitudinal study.** Dechow et al. (2012) found a longitudinal study provided the insights and information needed for more effective earnings management investigations. Badertscher (2011) used a longitudinal study and discovered that some

firms' managers changed earnings management practices and procedures. Once exhausting accepted GAAP methods with aggressive application decisions, the managers tended to sustain the artificially high valuation using the prohibited, sometimes fraudulent, methods to overstate reported earnings and results. Watrin et al. (2014) employed a longitudinal study over a seven year period in Europe to measure and track earnings management related to the book-to-tax conformity issue. The authors used discretionary accruals for their research, employing data from individual firms' financial statements to refine and improve the identification of earnings management attributes regarding the book-to-tax conformity issues. Their approach resembled the earnings management search that Goel (2012) used in India. Gerakos (2012) detected earnings management in the U.S. firms using accruals to offset low earnings using a longitudinal approach. Ahmed and Azim (2015) studied earnings management behaviors in the Bangladesh cement industry using published financial statements in a longitudinal study to compare results over time. Aerts et al. (2013) found the cross-sectional case studies limited their capture of the earnings management symptoms as the dynamics of year-to-year changes flagged the manipulation or its symptoms more effectively.

**Cash flows and working capital bloat.** The balance sheet (or financial position statement) offset earnings manipulations and reflected accumulations when multiple years of manipulation occurred. Bhuiyan et al. (2013) pioneered an integrated approach to earnings management analysis in New Zealand. The authors used the measure of free cash flow as an indicator of discretionary accruals in addition to the cash flow from operations. The authors' new approach used regression to compare the free cash flow

results versus traditional methods like the Jones (1991) model and the Performance Matched Accruals model (Kothari, Leone, & Wasley, 2005). In addition, Peek et al. (2013) compared discretionary accruals estimates across samples from nine countries, six in Europe and Australia, (all under the IFRS), the United States, (reporting under the U.S. GAAP), and Canada (reporting using the Canadian GAAP since prior to the IFRS adoption). Peek et al. tested the Jones model versus alternative models tested by Dechow et al. (2012) for identifying discretionary accruals, each distinctively calculating the accruals anomaly or discretionary elements that indicated earnings management symptoms. Peek et al. focused on the importance of cross-country differences using indicators they labeled *sources of estimate errors*, including measures like sales growth persistence, accounting practices, and sample size. Gerakos (2012) expanded the accruals concept for detecting earnings management by using balance sheet account values as a severity measure relative to the earnings impacts, thereby addressing the cumulative effects.

**Meta-analysis and ratio analysis.** Some ratio analyses supported earnings management work, primarily as supplemental indicators rather than the primary analytics. Jansen, Ramnath, and Yohn (2012) used a new test for earnings management, analyzing results of the U.S. firms using financial ratios, including asset turnover and profit margin. Keung and Shih (2014) developed a meta-analysis of 45 articles where they evaluated the models using the return on assets ratio to normalize earnings by dividing the earnings by total assets, such as the modeling proffered by Jones (1991) for discretionary accruals. The performance method effectively matched two firms based on their performance

ratios rather than employing other criteria like size and industry. The authors found studies using performance-matched firm pairs could skew results due to performance extremes while they avoided the problem where they used the total assets model. The collective view was the total assets value effectively normalized earnings.

Following a different market view, Charitou et al. (2015) tracked major valuation changes and resultant default risk of firms in Europe under the IFRS with a model involving the market view of a firm's value. The authors defined a ratio, *Tobin's q*, using the market value versus the book value of assets with their model, but it was premature to evaluate this new work. Using some ratios with earnings and balance sheet analyses enabled them to flag the earnings management risks. Employing market values presumed knowledgeable stock trades, which introduced the dynamics involving market reactions to changes over time in the longitudinal studies.

**Additional analytical approaches.** A few miscellaneous approaches were individualized, novel methods for earnings management insights. Aerts et al. (2013) compared the evidence in discretionary accruals to elements in the management commentaries in the annual reports using content analysis. The management commentaries served as crucial disclosure in the U.S. and Canadian jurisdictions, where robust investor protection regulations and enforcement existed. Behn et al. (2013) used *core earnings*, effectively operating income instead of net income, by industry for their earnings management investigations. Dilger and Graschitz (2015) and Aerts et al. stratified information by industry to explore earnings management levels and relationships at a more granular level, enabling better visibility using the comparative

size variations of industries. The two studies affirmed industry alignment over performance based matching for earnings management discovery. In another approach, Koubaa et al. (2013) found earnings management constrained among Canadian firms that used non-financial performance measures to validate earnings. The authors found the operating changes in financial and non-financial measures ran in parallel absent earnings management. The operating and non-financial measures provided another approach for testing for the appearance of earnings management.

Some researchers viewed the research on the causes for earnings management as primary in importance while quantitative research leveraged circumstances to flag likely cases. The researchers with the root cause perspectives focused on behavioral and situational studies. For example, Gopalan and Jayaraman, (2012) categorized their sampled nations based of their legal systems reflecting common law versus code law jurisdictions. The researchers established the likelihood of earnings management in light of the regulatory demands for investor protection and enforcement standards. Under similar circumstances, Hu et al. (2012) found Chinese government policies induced earnings management behaviors to report sufficient financial results to prevent *de-listing*, or denial of the commercial status allowing market trading of stock, or *listing*. As a behavioral example, Stadler and Nobes (2014) leveraged the behavioral perspective to identify the motivation sources for manipulating earnings. The authors viewed the root causes as cultural norms manifested by the legal systems. Stadler and Nobes discovered these indicators and symptoms of manipulated financial results using analytics and statistics extracted from secondary financial information for publicly held firms, a

behavioral viewpoint noted for my focus on and planned selection from nations of code law jurisdictions.

## **The Quantitative Survey and Differing Methodologies**

### **Datasets and Databases**

The accounting researchers largely depended on sample sets from secondary data like online databases of large firm populations and some published financial statements of individual firms. Not a commonly stated practice, Goel (2012) used published financial reports from individual firms to collect data for his study in India. Amewu (2014) used the Bloomberg database for his financial statement as well as descriptive, qualitative information, with download features including Microsoft Excel™ downloads. Tarca et al. (2013) found the Mergent database provided the financial statements of firms by element for the European firms. Candido, Coelho, and Peixnho, (2016) found the annual financials and firm level descriptive information available for European firms in the Amadeus and Osiris databases from the Bureau Van Dijk. The researchers found the needed financial data available and accessible from multiple sources.

Many sources proved similarly useful for researchers needing secondary data. Dechow et al. (2012) collected secondary, U.S. information from the Compustat database to develop working capital ratios to test trends and changes statistically. The authors used the statistical  $t$  test or Student's test for analyzing earnings management and the  $t$  test flagged anomalies in the results. Behn et al. (2013) analyzed class shifting using data from the Compustat Vantage Industrial-Commercial file for the years 1998-2008. The authors also highlighted a crucial distinction for more recent years for which the vendor

made substantive data element definition changes for studies for 2009 and later. Lang et al. (2012) and Liu, Rowe, and Wang (2012) collected data from the Thomson Reuters Datastream Advance database to sample multiple years of financials for firms in 46 countries. Charitou et al. (2015) used the Datastream database as well for their European study involving cash flow studies. Zéghal et al. (2012), to collect data for 15 nations in the European Union, cited the World Scope database in the Thomson Financials for selected financial results and measures. Brown et al. (2014) measured country differences in regulatory enforcement using proxies for 51 countries for each of the years 2002, 2005 and 2008, using publicly available data provided by the International Federation of Accountants, the World Bank, and the national securities regulators.

While some of the foregoing research projects used large samples, Wee et al. (2014) found population and sample sizes crucial in their Australian firm study, as the capital market population of listed firms was smaller in Australia than for many industrial economies. Small population generalizability presented a problem beyond the confines of Australia. Similarly, Alves (2014) involved the small population of Portuguese listed firms and then limited his sample size due to data collection intensity in annual reports for each firm even though he sacrificed generalizability.

### **Statistical Models for Testing Hypotheses**

Researchers used models and statistics to refine and validate their financial and statistical modeling. For example, Aerts et al. (2013) as well as Behn et al. (2013) employed sensitivity tests for robustness, varying the samples by including and excluding selected attributes like nation, firm size, and industry to determine variation and

sensitivity. The example researchers established which models provided the internal validity as well as the data and processes that provided external validity.

Many authors collected and used actual values directly. Other researchers like Lang et al. (2012) used the logarithm of selected financial information, such as capitalized market and net asset values, to facilitate their analyses using the indirect values. Aerts et al. (2013) expressed the total assets as a natural logarithm of the balance sheet value to support their regressions and other analytics. Liu and Xiong (2013) utilized parametric models for regression. Dechow et al. (2012) used a scaled logistic probability labeled an  $F$  score” where the  $F$  was greater than one,  $F > 1.00$ , to indicate a likelihood of value misstatement up to three years prior to restatements mandated by regulators under Securities Exchange Commission enforcement action. Charitou et al. (2015) used a logistic regression for analyzing the default risk of firms, classifying the firms as having high or low risk of defaulting, effectively going bankrupt for a shortage or the lack of cash. Aerts et al. used the Pearson correlation to test the independent variables and found weak correlation but they found multicollinearity was not a problem for the results. The researchers leveraged a wide selection of models and statistics to ensure they evaluated the level of accuracy and conversely, the level of risk in their conclusions.

### **Conclusions**

To identify the symptoms of earnings management, Aerts et al. (2013) used various models to identify components of accruals of revenues and costs, highlighted above, by segregating routine accruals from discretionary or abnormal accruals. The researchers subjected those values to additional analyses using descriptive statistics,



control charts, and regression analyses to identify normal levels of variation versus the outliers. The outliers were flagged as reflecting earnings management symptoms. In addition, Choi and Pae (2011) stratified earnings as recurrent and operational versus non-recurrent and special, regressing the components and totals against cash flows and working capital accounts to identify anomalies and outliers. Charitou et al. (2015) calculated financial ratios using costs and earnings components and balance sheet components to trend for anomalies. Keung and Shih (2014) affirmed the use of total assets for normalizing or scaling earnings values for comparisons. The annual, financial information by selected firm for specified periods of time provided trended information streams that researchers like Behn et al. (2013) viewed cumulatively and disaggregated by their national jurisdiction and industry. Dechow et al. (2012) applied statistical tools like the Student's or *t* test and Shanker (2016) supported the use of the analysis of variance to provide indicators of the statistical significance of variations and anomalies.

Researchers developed data sets and regression models to correlate significant economic events with the reported financial impacts. The researchers identified significant events like restatement announcements and highlighted events worthy of disclosures in financial statement notes and the management commentaries included with the financial reports. They classified and coded the events for correlation and analyses with earnings levels or earnings components (Aerts et al., 2013). Events might include codes for discontinued operations, product launch events, disclosed litigation, and revised financial statements. Cost components could include vulnerable expense classes that were conducive to manipulation, such as depreciation and amortization, goodwill fair

valuation, pension and postretirement benefits accounts, allowances for inventory obsolescence and receivables doubtful accounts. Beneish et al. (2013) found cases of earnings manipulation using aggressive accounting policies but creating working capital bloat, where current assets increased unrealistically versus the current liabilities. Bhattacharya et al. (2012) found management leveraging reserves for earnings management, including the miscellaneous cost items like discontinued operations and product lines. The value in some cases versus the seeming swing between types, called classification shifting (Abernathy et al., 2014), enabled researchers to both isolate symptomatic cases and to statistically evaluate them against norms to identify the abnormal and discretionary amounts that suggested they represented earnings management. The researchers also compared and correlated operating measures as attributes to earnings trends to expose irrational and illogical changes and trends, again suggesting they were cases of earnings management.

### **Summary**

In Chapter 2, I reviewed the literature addressing many aspects of earnings management in the global and U.S. financial reporting and especially focused on the European issues. I highlighted the gaps in research for the European code law nations that I identified and discussed in Chapter 1. In Chapter 3, I presented my research methodology and concluded my Proposal.

## Chapter 3: Research Method

### **Introduction: Purpose and Preview**

The purpose of this quantitative study was to forensically examine the symptoms and cases of earnings management among listed firms in selected European code law nations. I used a longitudinal method to find earnings management symptoms manifested as excessive discretionary accruals using various tests (see Dayanandan et al., 2016). I compared reported and economic earnings for statistically significant differences (see Govendir & Wells, 2014). I evaluated the statistical significance using Student's *t* test methodology (see Dechow et al., 2012). I identified restatement cases, and I compared the restated and economic earnings for matches to uncover earnings management (see Loyeung et al., 2016). The design was longitudinal, and I used secondary data for 4 years (see Watrin et al., 2014) from the Mergent database (Tarca et al., 2013) and other comparable sources, like Bloomberg (Amewu, 2014) and Osiris (Candido et al., 2016) databases, in the public domain. I excluded banking, financial, and insurance firms (see Dechow et al., 2012). The independent variables included the reported earnings, restated earnings, and total assets. I normalized the dependent variables for comparability; I divided the reported, restated, and economic earnings by total assets (see Keung & Shih, 2014). I calculated the economic earnings by adjusting the reported earnings for the discretionary amount, the management earnings adjustments (see Brown et al., 2014).

I segmented the research program components into the sections of Chapter 3. I discuss the research design in the next section. I detail the program by identifying the research questions and explaining the relevant math formulas. I specify the target

population in my next section as well as the selection criteria for the research subject firms. I describe my data collection procedures and detail my independent and dependent variables for my research modeling. I share the details of my analysis and how my modeling work addressed this work. I discuss the reliability and validity in my last section before the summary.

### **Social Purpose of the Study**

My research inquiry into earnings management supported the publication of transparent financial information by publicly held firms applying the IFRS, identifying the management of firms as accountable to the investment community (see Ferreira et al., 2013). The reporting under the IFRS supported and promoted information transparency; managers attempted to subvert that objective when they allowed or facilitated earnings management attributes in reported earnings (Mackenzie et al., 2015). Publicly listed firms sold securities to investors who might invest like the large scale businesses and institutions with sophisticated analytical tools and knowledgeable analysts (Beneish et al., 2013). Small scale (even ignorant), individual investors targeted by managers of publicly listed firms were investors who were vulnerable to asymmetric reporting (Asli-Basoglu & Hess, 2014).

Given the availability of the web based and investment tools of the capital markets, many individuals have attempted to choose securities for their investment portfolios to support their personal life goals for financial security and retirement (Asli-Basoglu & Hess, 2014). Furthermore, the movement by governmental and commercial entities toward defined contribution pension programs, often attached to individually

managed investment accounts, was another way private investors sought to develop their personal investment portfolios (Asli-Basoglu & Hess). While professional investors had the means and talent to identify the risks and magnitude of manipulated reporting, the private investors were less likely to detect problems before signaling events like a radical change in the stock price as a market reaction to now public news. Signals were typical of major cases like the U.S. firms WorldCom and Enron in 2002 (Arnold & Harris, 2012).

My social purpose was to provide the capital market regulators with the tools to identify potential cases where they might investigate companies with suspicious earnings management symptoms. The enforcement officers might take regulatory action, which might preempt injury to the all too easily victimized working class members attempting to manage personal portfolios (Beneish et al., 2013). On a broader scale, international concerns among regulators for low earnings quality deterred the adoption of the IFRS by major economic powers like the United States (Alon & Dwyer, 2016), Japan (Yamaji, Hudson, & Schneider, 2012), and India (Kably, 2015). As such, surmounting the perceived quality issue might also redress the figurative fear factor impacting the regulators' decision to avoid the adoption of the global accounting standards, the IFRS. The regulators might reduce this barrier to global commerce including the direct foreign investment induced by the IFRS (Akisik, 2013).

### **Research Design and Rationale**

I employed the quantitative methodology using secondary data originating in the published financial statements. I used selected statistics and calculated ratios as well as qualitative information coded to augment the analysis and stratify the results (see

Dechow et al., 2012). The qualitative data elements included the individual firm's industry, domiciling nation, listing market or markets, and material economic events crucial to evaluating the financial results, among other elements. The codes facilitated stratifying segments for analysis and determining relationships among the tracked variables (Peek et al., 2013).

In the longitudinal study, I employed vertical calculations (same year) and horizontal calculations (year over year) to recognize trends and changes indicating the earnings management symptoms for the analyzed businesses (see Warren, Reeve, & Duchac, 2016). Dechow et al. (2012) found that a longitudinal study provided the insights and information needed for more effective earnings management investigations. My analyses involved comparing the reported and economic earnings normalized as the return on total assets (see Keung & Shih, 2014) for firms in different, nonfinancial industries from 2011 through 2014 to other firms and averages for relevant segments, like the jurisdiction (Brown et al., 2014) and industry (Goel, 2012). I excluded selected industries, such as banking, financial services, and insurance companies, as their financial statements were dissimilar (see Ahmed et al., 2013). I focused on detecting earnings management symptoms in the published financial statements and measuring their significance and frequency.

I tracked and classified crucial elements on different bases to support the analyses. The analyses resulted in adjustments to the reported income on published financial statements to calculate the economic earnings and to identify gaps symptomizing earnings management (Peek et al., 2013). I determined the adjustments for

economic earnings by segregating working capital and operating elements as discretionary accrual amounts to isolate the estimates and policy choices by management that might indicate manipulation, based on Goel (2012), Dechow et al. (2012), and others. I disaggregated the estimates by fiscal year into multiple components, such as reserves or contra accounts for assets and the discretionary elements of current and noncurrent accrued liabilities excluding the tax accounts. Cready et al. (2012) found manipulations in depreciation and amortization, example asset contra accounts. Ramanna and Watts (2012) found suspect goodwill impairments. The manipulation of the intangible asset accounts, including amortization, offered options under the IFRS (Ji & Lu, 2014). Managers employed research and development capitalization to manipulate reported earnings (Dinh, Kang, & Schultze, 2016). Other contra accounts, like reserves for inventory obsolescence and doubtful accounts in trade receivables, provided reporting managers with options for manipulation (Peek et al.). I looked for evidence of the discretionary amounts, labeled accrual anomalies by Govendir and Wells (2014), who analyzed Australian financials and found attributes unique to the IFRS in this program. The authors found similar attributes of the accrual anomalies in their prior work with two other researchers (Clinch, Fuller, Govendir, & Wells, 2012). These behavior streams of assets and liabilities contrasted the reported and economic income amounts for noncash changes for reported earnings versus the real economic gains reflected in cash flows.

### **Analytical Strategies**

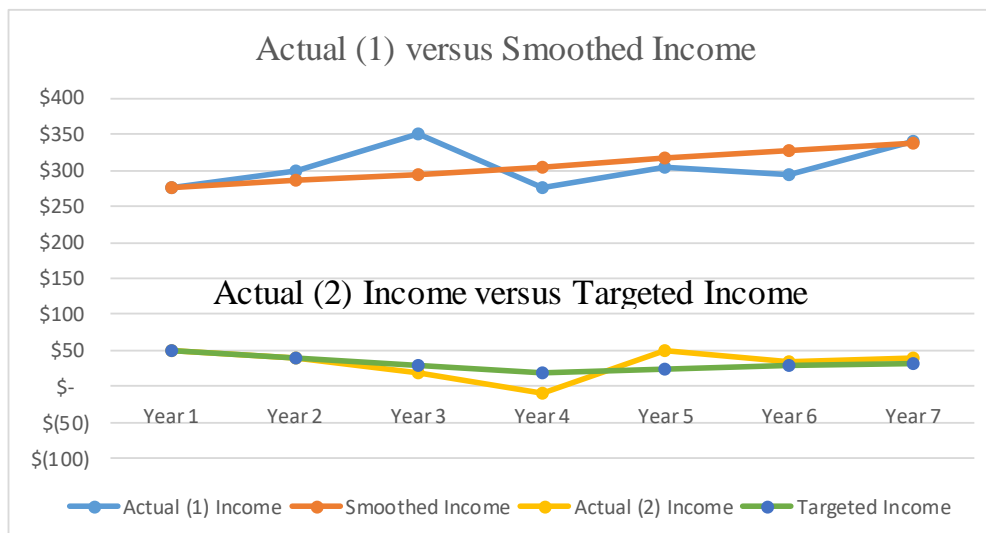
The symptoms of earnings management manifested varied effects that became visible when using a longitudinal study (Charitou et al., 2015). Some forms of earnings

management were annually cyclical while others did not reverse after only 1 year (Al Farooque, 2016). A form of earnings management indicator to explore included reporting earnings above benchmarks, including the prior year amount (Liu & Xiong, 2013), zero (Dierynck et al., 2012), and target earnings levels like the budget (Ahmed et al., 2013). These proxies strengthened the argument for the longitudinal models, indicating earnings management and corroborated my findings. For example, negative adjustments for economic earnings of 2 to 3 years could flag earnings management for increasing income, including the figurative beating targets like zero and prior years, hence the longitudinal view (Dechow et al., 2012). Similarly, alternating positive and negative changes with a slightly positive slope flagged earnings smoothing, labeled *persistence* (Blaylock et al., 2012), for moderating the consistency of the rate of reported growth.

A longitudinal example of benchmarking earnings appeared in Figure 1 to demonstrate the earnings management proxies. The series labeled the Actual (1) Income represented the naturally occurring economic results while the virtually straight line showed the effects of smoothing for the seven hypothetical, reported years' incomes. The undulating series labeled the Actual (2) Income represented the natural, economic results, which fell below a target of zero. The Target Income line showed the effects of reaching income targets for the seven presented years, eliminating most of the variations and especially the years that fell below a target of zero. In both cases, the total income for the 7 years was about the same. Figure 1 is a hypothetical case that showed the effects of manipulating the timing of the reported income despite timing of earning the real or economic income.



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Actual (1) Income	\$ 275	\$ 300	\$ 350	\$ 275	\$ 305	\$ 295	\$ 340
Smoothed Income	\$ 275	\$ 285	\$ 295	\$ 305	\$ 316	\$ 327	\$ 338
Actual (2) Income	\$ 50	\$ 40	\$ 20	\$ (10)	\$ 50	\$ 35	\$ 40
Targeted Income	\$ 50	\$ 40	\$ 30	\$ 20	\$ 25	\$ 28	\$ 32



*Figure 1.* Two cases of earnings management with graphic examples.

I performed various analyses for evidence of earnings management on a longitudinal basis. I built on the work of researchers like Goel (2012), Dechow et al. (2012), and Gerakos (2012), comparing economic versus reported earnings to facilitate a longitudinal comparison to test for the proxies for and attributes of earnings management. I analyzed the accrued charges and credits for selected asset and liability accounts to isolate the discretionary content (Charitou et al., 2015). Working capital as a category was subject to counter cyclical changes, labeled bloat, as the non-cash earnings management events impacted the accounts collectively (Beneish et al., 2013). Asset contra accounts for accounts receivable, inventory, and property (Peek et al., 2013) as well as impairments for goodwill (Alves, 2013) were crucial if visible. Some contra

accounts, particularly those for current assets like receivables and inventory, often remained hidden through aggregation of reported values; the investigator found the values via an option like data mining in the notes to the statements. Liabilities included accruals for routine activities in addition to non-recurring special items (Cready et al., 2012), including restructuring charges (Lee, 2014). These cases represented examples of accounts subject to manipulation; they served as proxies that signaled earnings management as a risk (Wiedman & Hendricks, 2013). Identifying the symptoms of earnings management was an investigation approached longitudinally over time with multiple, observable events from different perspectives, recognizing that the circumstances differed among firms (Charitou et al., 2015).

### **Models Selected for Earnings Management Detection**

Models for detecting the existence or the symptoms of earnings management depended on multiple approaches for identifying the discretionary items, effectively the manipulation adjustments to income (Charitou et al., 2015). I followed the work of Arnold and Harris (2012), who categorized the sources or forms of earnings management among the U.S. firms, reapplying the process to my target selection of European firms. I identified the symptoms of earnings management forms based on the firms manipulating estimates for routine events, like depreciation, accruals for special events, like discontinued operations, assumptions for fair valuation, like goodwill impairments, and policies for the accounting methods, like doubtful accounts reserves (Peek et al., 2013). I looked for the manipulation adjustments and accumulated them as discretionary items using models applied by the predecessor researchers, like Dinh et al. (2015) and Gerakos

(2012). The amount of the discretionary item was the amount of potential earnings management.

Already discussed in summary, my subsequent analyses included proxies for earnings management, following the work of Lang et al. (2012). Lang et al. tracked earnings management using smoothing or earnings concealment and earnings targets, that is, small loss avoidance, all based on accruals that adjusted the reported income from economic income. The graphic in Figure 1, above, demonstrated the smoothing and target concepts. Rudra and Bhattacharjee (2012) found evidence of smoothing in India using the integral flexibility available with the IFRS. As such, I identified support for earnings management by reviewing evidence of estimates, policy choices, and income adjustments to smooth earnings (Akdogan & Ozturk, 2015). The variations in the symptoms of earnings management required disparate approaches for detection based on the variations in program designs.

### **Rationale for Research Design**

Aerts et al. (2013) used various models to identify components of accruals of revenues and costs by segregating routine accruals from discretionary or abnormal accruals to identify the symptoms of earnings management. Keung and Shih (2014) subjected accruals to additional analyses using descriptive statistics to identify normal levels of variation versus the outliers. The statistical tests facilitated flagging the outliers that reflected earnings management symptoms. The annual financial information by selected firms for specified periods of time provided trended information streams that researchers like Behn et al. (2013) viewed as both cumulative and disaggregated by

segment, the national jurisdiction and industry. Dechow et al. (2012) applied statistical tools like the Student's test, also called the  $t$  test, for testing the significance of the discretionary elements in financial statements. Smith (2014) found the  $t$  test supported determining the statistical significance of differences that the author labeled the earnings management symptoms or attributes.

Peek et al. (2013) developed data sets for targeted financial analyses to facilitate cross references for significant economic events with the discovered earnings management impacts. The researchers identified significant events that can explain or justify the income adjustment in the discretionary item. Such events flagged potential false positives in the hypotheses for symptoms of earnings management. Example events included restatement announcements and other highlighted events worthy of disclosures in financial statement notes and the management commentary in financial reports. Routine events to flag included product line cessation with a related inventory pool to obsolete or a major customer account loss in doubtful accounts due to bankruptcy. The authors classified and coded the events for cross reference with earnings components like reserves and accruals. Non-recurrent events might include coding cost reserves for discontinued operations, product launch activities, and disclosed litigation. Coded cost highlights could include disclosures on vulnerable expense classes and accounts which were conducive to manipulation, such as depreciation and amortization, goodwill fair valuation, pension and postretirement benefits, allowances for inventory obsolescence and the doubtful accounts for receivables (Aerts et al., 2013).

### **Target Population, Geography, and Case Selection Procedures**

The target populations included publicly held and traded business enterprises in selected nations of the European Union. Selectable nations included those with mature and developed capital markets and which reflected the code law heritage. Fearnley and Gray (2015) recognized the increased risk and likelihood of earnings management in the code law jurisdictions. As such, I deselected or excluded the United Kingdom and Ireland as European common law nations (Fearnley & Gray). The selected businesses or firms included publicly listed manufacturing, non-financial services like distribution and transportation, retail, mining, and other listed enterprises (Ahmed et al., 2013). Walden's institutional review board or IRB approved my research program and data collection on May 10, 2017. The board registered my approval under case 05-10-17-0123493. I requested an extension about May 6, 2018 and I gained approval for the extension.

### **Population**

The population included listed companies in the European Union capital markets and stock exchanges. Industry criteria also applied which reduced the population by excluding financial services, banks, and insurance companies. The selection criteria included nations with developed or established industrial economies under the IFRS for five years. The criteria excluded the European countries in historically regulated economies absent the investor oriented capital markets and identified by Brown et al. (2014) as developing or emerging economies, such as the Baltics and the Eastern Bloc, like the Balkans and others like Hungary, Romania, and Slovenia. Many of these nations were relatively new members of the European Union and only recently adopted the IFRS,

while the western and northern nations had mature capital markets and 5 or more years of reporting experience under the IFRS (Brown et al.). As noted above, the selection of countries demonstrated that populations were limited in many of the Western and Northern European members. Collectively, they offered sufficient listed company counts to supply a testable and representative selection. For example, Austria, Belgium, Denmark, the Netherlands, Portugal, and Luxembourg had few firms individually. Conversely, when combined with firms of France, Germany, Sweden, and Spain, all these code law nations provided firms for my research targeting financial restatement and earnings management, making firms in Western and Northern Europe the logical source populations for my research program (Ahmed et al., 2013).

I excluded the common law nations in Europe, specifically Ireland and the United Kingdom, and others under the IFRS outside of Europe under common law. They did not meet the legal system selection criteria and appeared in Table 1. Australia, Canada, and the United Kingdom faced continuing research regarding reporting quality. Another common law nation, the United States did not apply the IFRS. I deselected the United States, as many researchers subjected the listed U.S. firms to significant scrutiny relative to earnings management and where some authors pioneered discretionary accruals earnings management work (Jones, 1991; Schipper, 1989). I listed the populations of the publicly traded firms of the common law nations in Table 1, generally more numerous, except for Ireland, than in many European code law nations where I focused my work.

Table 1.

*The Population of Listed Firms for Nonselected, Common Law Nations*

Nations <sup>a</sup>	Listed domestic firms <sup>b</sup>	IFRS user	European Union	Listed U. S. firms <sup>c</sup>	Forbes nonbank 2000 <sup>d</sup> firms
Australia	1,959	Yes	No	234	42
Canada	3,876	Yes	No	104	65
Ireland	42	Yes	Yes	25	17
United Kingdom	2,179	Yes	Yes	313	95
United States	4,102	No	No	4,102	543

*Note.* <sup>a</sup> Adapted from Brown et al. (2014).

<sup>b</sup> Adapted from World Bank (2016).

<sup>c</sup> Adapted from Top Foreign Stocks (2015).

<sup>d</sup> Adapted from Chen (2015).

The selection came from the publicly held and listed firms of code law, European nations. They were firms traded on the stock exchanges and included some firms with international visibility through their global significance vis-à-vis their presence on lists like the Forbes Global 2000 Largest Firms and the U.S. listed and publicly traded, European firms. The nations of Western and Northern Europe adopted the IFRS in 2005 and applied the standards to their mature capital markets. The firms of Europe provided an appropriate population from which to sample the large firms excluding industries highlighted for exclusion above based on the listed attributes (Brown et al., 2014).

## **Selection Procedure**

I collected the financial results of the selected publicly listed firms domiciled in the Western and Northern code law nations of the European Union. I selected the largest firms meeting the criteria from combined jurisdictions or nations, which combined for a total of about 400 firms. The firm count compared to the firm count used by Fok and Franses (2013), which count they found sufficient to affirm their earnings management study. The total asset value of the firms determined the financial size of the firms, consistent with Aerts et al. (2013), available in the sources and collected with the data sets. The total asset value was also the basis for normalizing the observations for developing the analytics and testing the hypotheses, per Keung and Shih (2014). Firm size and the thoroughness of disclosures tended to coincide. The larger firms offered more detailed information to support the analyses, as Nobes and Perramon (2013) found in their study of firms in the nations reporting under the IFRS.

The selected firms included industry members like manufacturing, logistics, services, transportation, and other for-profit enterprises. I excluded businesses in the banking, financial services, and insurance industries as well as utilities. I collected and grouped conglomerates with their self identified industry despite their mixture of industry affiliations (Ahmed et al., 2013), since I wanted to explore industry relationships as well as compare results based on the national jurisdictions. Further, as a deselection criterion, I excluded firms involved in divestitures, mergers, and acquisitions, initial public offerings, and other firm cases that create or offer conditions outside the scope of the applied models and work. The presence of such cases could disrupt the analyses and interfere



with the determination of representative results since the model trends depended on year-to-year consistency and continuity of the individual firms' business models and activities. I culled those with unavailable information in the databases needed for analysis unless I could collect it from other sources (Ahmed et al.).

I selected firms from Western and Northern Europe based on the evidence of their using the IFRS since 2005 and that the nations showed gradual improvement in enforcement. According to Brown et al. (2014), who measured country differences in auditing quality and regulatory enforcement, the attributes showed improvements. The firms' scores trended higher and more positively during the years of the researchers' longitudinal study, including 2002, 2005, and 2008, making them rational for study, starting with financial information in 2010. The western and northern nations of the European Union implemented mandatory the IFRS reporting in 2005. The public firms of these nations had at least five years of the IFRS experience by 2010, not including firms that applied the IFRS voluntarily before the mandatory adoption (Dayanandan et al., 2016).

### **Selection Size**

The targeted firms came from the nations of Western and Northern Europe, with sufficient listed firms to provide a selection set of about 400 firms from these jurisdictions. Fok and Franses (2013) found almost 400 firms sufficient for their earnings management study across multiple countries. The selection of firms provided the opportunity to study a variety of industries from the region and about 1,600 firm year observations to analyze for the restatements and the more subtle earnings management

attributes of discretionary accruals. Western and Northern Europe had over 6,000 public firms with over 3,000 listed firms in Spain, some of which were likely financially insignificant in asset value. The top 1,000 firms in value were less than 20% of the available firms although they include the stated exclusions. Only a few European nations presented large populations of listed businesses, but smaller nations provided large firms; procedures to gain insights using the available selection process serviced my research needs (Ahmed et al., 2013).

Alves (2014) worked on the limited population of listed firms available in Portugal in his research on earnings quality. The targeted populations of firms came from the Western and Northern European nations, a region with little visible earnings management research heretofore and which nations reflected the code law legal system under scrutiny (Brown et al., 2014). While some of the foregoing research projects used large samples, Wee et al. (2014) found smaller population and sample sizes crucial and generalizable in their Australian firm study, as the capital market population of listed firms met their criteria even though the population was smaller than for some industrial economies.

### **Operationalized Research Variables**

I evaluated my selected firms using three research questions to guide my program. Evaluating the hypotheses aligned with my questions facilitated evaluating the firms for earnings management symptoms or attributes. The determination of the discretionary item value for each firm year facilitated adjusting the reported earnings to the economic earnings (Shust, 2015). My hypotheses explored the relationships (Dixon et al., 2015)

between the reported and economic earnings as well as the difference between them during different years, for distinct segments of firms, and for all the firms collectively (Dechow et al., 2012). The discussion started with the explanation of the discretionary item (Call et al., 2014). I followed with the individual analytical approaches vis-à-vis the research questions and their relevant hypotheses to test the relationships of the discretionary item for firms and segments with reported income for earnings management symptoms.

### **Discretionary Item Math and Variables**

The data collection spanned 5 years to capture 4 usable years of data for the study. The first year provided the basis for change calculations for selected accounts (Keung & Shih, 2014). Tracking the level of changes in the flows from year to year supported the longitudinal study (Dechow et al., 2012). The detailed account values facilitated isolating the discretionary items from normal or nondiscretionary changes in specified components of the earnings for each firm year observation in the database (Dixon et al., 2015).

The discretionary item,  $D_{fy}$ , was the dependent variable that represented the difference for a firm year between the reported and economic earnings. Table 2 presented the formulas for the discretionary item,  $D_{fy}$ , to support evaluating the research questions and which I explained below. I used math, statistics, and modeling to highlight relationships crucial for evaluating the hypotheses. The subscripts  $f$  and  $y$  designated the individual firm and year, respectively. More specifically, the discretionary item,  $D_{fy}$ , was the amount that differed from the normal, predicted change for the firm's specified accounts based on the rate of sales change for a firm year (Gray, Kang, Lin, & Tang,

2015), starting with the second year. The calculations applied models by the predecessor researchers, like Dinh et al. (2015) and Gerakos (2012) and used the math operators specified in Appendix A, such that

$$D_{fy(2,5)} = \sum(\text{Current Specified Accounts } (gfy_{(2,5)})) - ((1 + \Delta \text{ Sales}\% (fy_{(2,5)})) \times \text{Prior}$$

Specified Accounts  $(gfy_{(1,4)})$ ) showed the logic and  $D_{fy(2,5)} = \sum I_{gfy} = \sum (A_{gfy} - ((1 + S\%_{ofy}) \times A_{gf(y-1)}))$  was the model, where  $g$  represented one specified or selected account for a firm year,  $f$  and  $y$ , respectively, with details following.

Table 2.

*Discretionary Item Formulas and Math Relationships*

Variable name	Variable	Formula and math relationships
Firm year discretionary item,	$D_{fy}$	$\sum I_{gfy} = \sum (A_{gfy} - (A_{gf(y-1)}) \times (1 + S\%_{ofy}))$
Sales rate of change.	$S\%_{ofy}$	$\Delta \text{ Sales}\%(fy_{(2,5)}) = (S_{fy} - S_{f(y-1)}) / S_{f(y-1)}$
Discretionary item in account	$I_{gfy}$	$A_{gfy} - (A_{gf(y-1)}) \times (1 + S\%_{ofy})$
Change in account value	$C_{gfy}$	$A_{gfy} - A_{gf(y-1)}$

The normal or operational (decimal) rate of change in a set of accounts for a firm year was the annual change in sales dollars, labeled as  $\Delta \text{ Sales}\% (fy)$  and presented in Table 2. Richardson et al. (2006) confirmed the discretionary accruals did not relate to the sales growth and distorted the earnings while nondiscretionary items were a routine amount aligned with sales. Sales drove only the normal operations and nondiscretionary elements of cost. The sales change rate,  $S\%_{ofy}$  was the dependent variable for sales growth or reduction (for a declining market). The sales change rate was the difference in sales in

the current versus prior years, divided by the prior year's sales value. The subscripts,  $f$  and  $y$ , designated the firm and year, respectively. The independent variable,  $S_{fy}$ , represented the sales value for one firm year, and it drove the calculation of the dependent variable,  $S\%_{fy}$ , the annual rate of change defined above. The statement for the sales rate of change between two consecutive years,  $y$  and  $y - 1$ , was  $S\%(fy)$ , which equated to  $(\text{Sales } (fy) - \text{Sales } (f(y - 1))) / \text{Sales } (f(y - 1))$ ; it reflected the logic. The model was  $S\%_{fy} = (S_{fy} - S_{f(y-1)}) / S_{f(y-1)}$ ; it represented the model for the annual rate of change in sales,  $S\%_{fy}$ , for the firm,  $f$ , and year,  $y$ .

The change in a specified or selected ledger account value originated in one of the financial statements, including the balance sheet, income statement, and the cash flow statement, or in the notes to the statements. The dependent covariable,  $C_{gfy}$ , shown in Table 2, represented the annual change in the value of one account. The subscript,  $g$ , was the specified account in a list of accounts named with the independent covariable,  $A_{gfy}$ , shown in Table 3 as a calculation input. The annual change in each specified account, the dependent covariable,  $C_{gfy}$ , had both the normal or nondiscretionary content as well as the amount that was abnormal or discretionary (Dechow et al., 2012); the discretionary component represented the target for my research and modeling work. The amount above or below the normal or nondiscretionary amount, calculated using the rate of change in sales (or revenue), defined above as the dependent variable  $S\%_{fy}$ , was the basis for isolating the discretionary item value in each specified account. The dependent covariable,  $I_{gfy}$ , shown in Table 2, where the subscript  $g$  identified the specified account, represented the discretionary item value. The logical statement for the individual account

value annual change,  $C_{gfy}$ , was a function of the independent covariable,  $A_{gfy}$ , shown below in the formula for the discretionary content value:

$C(gfy) = \text{Specified Account Value } (gfy) - \text{Specified Account Value } (gf(y - 1))$  showed the logic. The model was  $C_{gfy} = A_{gfy} - A_{gf(y-1)}$ , where  $A_{gfy}$  was the covariable name for the value of a specified account,  $g$ , for a firm year,  $f$  and  $y$  respectively, and where the subscript  $y - 1$  identified the year prior to  $y$ . All specified accounts,  $A_{gfy}$ , appeared in Table 3. Similarly,  $I_{gfy} = (A_{gfy} - (A_{gf(y - 1)} \times (1 + S\%_{ofy})))$  was the model for calculating the discretionary item amount,  $I_{gfy}$ , related to the discretionary amount in the annual change in value of each specified account,  $C_{gfy}$ , for a given firm year,  $f$  and  $y$ , respectively. The subscripts were covariables, listed in Table 3.

Table 3.

*Independent Variables: Specified Accounts and Subscripts From Financials*

Name	Statement or notes item	Breakdown or disaggregation of elements
$A_{gfy}$	Current liabilities	Change in payables and accruals for routine items
$A_{gfy}$	Current liabilities	Change in accrued charges for special items
$A_{gfy}$	Long term liabilities	Change in accrued reserves for special items
$A_{gfy}$	Long term liabilities	Change in pension liabilities
$A_{gfy}$	Current assets	Change in accounts receivable
$A_{gfy}$	Current assets	Change in inventory
$A_{gfy}$	Cash flow statement	Depreciation expense
$A_{gfy}$	Cash flow statement	Amortization expense
$A_{gfy}$	Income statement	Fair value adjustment for impairment
$f$	Subscript	Identity for the firm or company
$g$	Subscript	Identity for the specified account
$i$	Subscript	Identity for the segment (of firms or nations)
$P_{fy}$	Disclosures	Restatement amount for reported earnings
$R_{fy}$	Income statement	Reported earnings, or income after tax
$S_{fy}$	Income statement	Sales or revenues
$T_{fy}$	Balance sheet total	Total assets
$y$	Subscript	Identity for the fiscal year
$z$	Subscript	Identity for the terminal year of study

*Note.* Naming assumptions for variable names appear in Appendix A.

The discretionary item,  $D_{fy}$ , was the dependent variable that represented the sum of the values of the discretionary content of each specified account,  $I_{gfy}$ , for a firm year.  $I_{gfy}$  represented the covariable for each account, where  $g$  specified each account and the subscripts  $f$  and  $y$ , respectively, identified the firm year. The discretionary item,  $D_{fy}$ , adjusted the reported earnings,  $R_{fy}$ , which was the independent variable. The sum of the discretionary item,  $D_{fy}$ , and reported earnings,  $R_{fy}$ , calculated or equated to the economic earnings, the dependent variable,  $E_{fy}$ , for a given firm year. As information, researchers in the cited literature employed many labels for the discretionary item, including the discretionary accrual (Call et al., 2014), accrual anomaly (Boubakri, 2012), and abnormal accrual (Aerts et al., 2013). The model,  $D_{fy} = \sum I_{gfy} = \sum (A_{gfy} - (A_{gfy-1} \times (1 + S\%_{ofy})))$ , represented the calculation for the discretionary item for a firm year, the dependent variable  $D_{fy}$ , shown above in Table 2. The dependent variable,  $D_{fy}$ , was the collective discretionary amounts in the specified accounts for a firm year, represented by the covariable,  $\sum I_{gfy}$ , in Table 2.

### **Q1 Math and Variables**

The following mathematical expressions, shown in Table 4, represented the variable relationships in the research Q1. The model,  $EN_{fy} = E_{fy} / T_{fy}$ , calculated the normalized economic earnings, where  $EN_{fy}$  was the dependent variable for the normalized economic earnings for a firm year, denoted by the subscripts,  $f$  and  $y$ , respectively. The model  $E_{fy} = D_{fy} + R_{fy}$ , calculated the economic earnings for a firm year, where  $E_{fy}$  was the dependent variable, and it was the sum of the discretionary item,  $D_{fy}$ , and the reported earnings,  $R_{fy}$ . The model,  $RN_{fy} = R_{fy} / T_{fy}$ , calculated the normalized reported earnings,



where  $RN_{fy}$  was the dependent variable for a selected firm year, denoted with the subscripts  $f$  and  $y$ , respectively. The subscripts were covariables, listed in Table 3.

Table 4.

*Q1 Relationships for Normalized Earnings*

Variable name	Variable	Formula and math relationships
Normalized economic earnings	$EN_{fy}$	$E_{fy} / T_{fy}$
Economic earnings for firm year	$E_{fy}$	$D_{fy} + R_{fy}$
Normalized reported earnings	$RN_{fy}$	$R_{fy} / T_{fy}$
Total assets	$T_{fy}$	Independent variable

**Q2 Math and Variables**

These mathematical expressions presented the relationships of the variables in Q2. The model,  $EN_{iy} = E_{iy} / T_{iy}$ , calculated the normalized economic earnings, where  $EN_{iy}$  was the dependent variable for the normalized economic earnings for a segment year, denoted by the subscripts,  $i$  and  $y$ , respectively. The model  $E_{iy} = D_{iy} + R_{iy}$ , calculated the economic earnings for a segment year, where  $E_{iy}$  was the dependent variable, and it was the sum of the discretionary item,  $D_{iy}$ , and the reported earnings,  $R_{iy}$ . The model,  $RN_{iy} = R_{iy} / T_{iy}$ , calculated the normalized reported earnings, where  $RN_{iy}$  was the dependent variable for a selected segment year, denoted with the subscripts  $i$  and  $y$ , respectively. The subscripts were covariables, listed in Table 3.

Table 5.

*Q2 Relationships for Segments*

Variable name	Variable	Formula and math relationships
Segment normalized economic earnings	$EN_{iy}$	$E_{iy} / T_{iy} = \sum(E_{fy})_i / \sum(T_{fy})_i$
Segment economic earnings	$E_{iy}$	$D_{iy} + R_{iy} = \sum(D_{fy})_i + \sum(R_{fy})_i$
Segment normalized reported earnings	$RN_{iy}$	$R_{iy} / T_{iy} = \sum(R_{fy})_i / \sum(T_{fy})_i$
Segment total assets	$T_{iy}$	$\sum(T_{fy})_i$

**Q3 Math and Variables**

The following expressions represented the relationships in Q3, as shown in Table 6. The model,  $PN_{fy} = P_{fy} / T_{fy}$ , calculated the dependent variable,  $PN_{fy}$ , reflecting the normalized earnings restatement amount. The independent variables,  $P_{fy}$  and  $T_{fy}$ , represented the restatement amount and total assets, respectively, for the firm year. The restatement events could occur sporadically, and I highlighted such discovered events with a database field called the restatement flag. Where the code or flag exceeded zero, the firm year reflected a restatement event to examine with Q3. The model,  $DN_{fy} = D_{fy} / T_{fy}$ , determined the value of the dependent variable  $DN_{fy}$ , reflecting the normalized discretionary item. The dependent variable,  $D_{fy}$ , and the independent variable,  $T_{fy}$ , represented the discretionary item and total assets, respectively, for the firm year. Conceptually, the discretionary item was the difference in economic and reported earnings, such that  $D_{fy} = E_{fy} - R_{fy}$ , where  $E_{fy}$  and  $R_{fy}$  were the variables for economic and reported earnings for a given firm year, denoted by the subscripts,  $f$  and  $y$ , respectively.

The firm and year in addition to a restatement flag highlighting the restatement event were also independent variables. The subscripts were covariables, listed in Table 3.

Table 6.

*Q3 Relationships for Restatement Events*

Variable name	Variable	Formula and math relationships
Normalized restatement amount	$PN_{fy}$	$P_{fy} / T_{fy}$ ,
Normalized discretionary item	$DN_{fy}$	$D_{fy} / T_{fy}$
Restatement amount	$P_{fy}$	Independent variable
Total assets	$T_{fy}$	Independent variable

### **Data Analysis**

The analysis goal was the determination of the significance of the economic income vis-à-vis the discretionary item for a firm or segment compared to the reported, accounting income on published financial statements. I assembled my collected data in firm year records that reflected their source financial statements disaggregated in fields to a level that supported my earnings management modeling.

My modeling tool was Microsoft Office Excel™, which facilitated creating datasets, performing analyses, and preparing reports as tables and graphs. The income statement, balance sheet, and the cash flow statement elements were the input fields enabling the calculation of the discretionary item amounts for each year and the assembly of multiyear trends of firm year observations as well as for segments of the population of selected firms, defined as aggregations of firms, like Behn (2013) and Aerts et al. (2013).

The data records also facilitated the calculation of financial ratios and the normalizing of earnings and adjustment values using total assets to effectively scale the varied amounts of firms for comparisons (Keung & Shih, 2014). Dependent on the year to year stability of the qualitative information, a second data set by firm was an option to house some descriptive fields for cross reference to the records of the financial records of the firms. The option could reduce data storage and streamline the database by avoiding redundant storage.

Microsoft Excel™ was a tool that provided a selection of database and statistical tools to support the needed analyses. Its inherent flexibility allowed me to perform sensitivity analyses for propositions or hypotheses, like prior researchers. For example, Aerts et al. (2013) and Behn et al. (2013) as well as others employed sensitivity tests for robustness. The authors selected segments based on attributes like nation or jurisdiction and industry to determine variation and sensitivity.

I collected selected qualitative information and assembled it as data records in tables to support the analysis and enrich the financial database. While fields occurred in the financial database discussed already, I built tables where the qualitative information fields resided with effective key codes to create a cross-reference for the firm year records. Driven in part by data sources, I downloaded the financial firm year records from the online databases, even though I might collect some of the relatively static table fields from other sources. I collected the segmentation codes, like the domiciling nation of a firm, the listing capital markets and stock exchanges, often more than one, the legal system, the industry identity, and other data fields that I might yet identify to support the

analysis and stratify firms as segments. I planned to build tables for the static, descriptive data elements for firms and for nations, using those identities as the cross-references to match as key codes for the financial database records.

### **Q1 With Hypotheses**

*Q1*: To what extent did earnings management differences occur between reported and economic earnings in each firm year? A significant difference would support the view that managers were not faithful to their roles under Agency and Stewardship theories with respect to the quality of earnings reported to investors, implying the occurrence of earnings management (Al Farooque, 2016).

*H<sub>0</sub>*: The difference between the economic and reported earnings was not statistically significant.

*H<sub>a</sub>*: The difference between the economic and reported earnings was statistically significant.

The paired *t* test compared the means, in this case the normalized annual average reported and economic earnings, to test for statistical significance occurring or existing between the two test values (Dixon et al., 2015). The paired *t* test recognized that the reported earnings and the economic earnings represented paired values for the same firm year before and after adding the adjustment called the discretionary item. The paired *t* test determined if the difference between the averages for each year was substantive for the observed years (Smith, 2014). I calculated the test statistic and compared it to a critical value representing 90% confidence, or  $p = .10$ . If the test statistic for a given year ran

below or equal to the set point value,  $p \leq .10$ , then I rejected the null hypothesis and recognized that a statistically significant difference existed (Dixon et al.).

I compared the two values of normalized economic earnings versus reported earnings for each of the selected years for all firms collectively. I calculated the economic earnings, represented by the dependent variable,  $E_{fy}$ , by adding the discretionary item, the dependent variable  $D_{fy}$ , to the reported earnings, the independent variable,  $R_{fy}$ . Further, I normalized the values for economic earnings, the dependent variable,  $EN_{fy}$ , and reported earnings, the dependent variable,  $RN_{fy}$ , using total assets, the independent variable,  $T_{fy}$ . Normalizing the values as a rate, described in the work of Keung and Shih (2014), facilitated comparing individual firms and groups of firms, year-to-year, as well as making collective comparisons for all firms. If the case was symptomatic of earnings management, then I expected the difference to be statistically significant, such that I rejected the null hypothesis,  $H_0$ . With that result, the significant differences enabled me to approve the research hypothesis,  $H_1$ . I used the paired Student's test, more generally known as the paired  $t$  test, to evaluate the difference for significance (Smith, 2014). I evaluated the difference for each of four years, the longitudinal period, to enable me to avoid the offsets that might make evidence of earnings management undetectable by accumulating the multiple years. The offsetting or equal but opposite signed amounts would effectively total to zero among the results of the consecutive fiscal years, as demonstrated by Dechow et al. (2012). Similarly, the collective years of data for all the selected firms could obscure details providing insights, making an expansion of the

hypothesis testing to encompass segments, like industries and jurisdictions, another consideration to undertake and analyze in the subsequent (second) research question, Q2.

### **Q2 With Hypotheses**

Q2: To what extent did earnings management differences occur between reported and economic earnings for a segment of firms (in an industry or domiciled in a nation) in a year? A significant difference would support the view that managers were not faithful to their roles under Agency and Stewardship theories with respect to the quality of earnings reported to investors, implying the occurrence of earnings management (Al Farooque, 2016).

$H_{2_0}$ : The difference between the economic and reported earnings for a given segment was not statistically significant.

$H_{2_a}$ : The difference between the economic and reported earnings for a given segment was statistically significant.

I used the paired  $t$  test to compare the means related to segment years comparable to the application to the firm years in Q1. I tested the normalized annual average reported and economic earnings for segments of industries and nations (Nichols et al., 2013) to test for statistical significance occurring or existing between the two test values of the segment (Dixon et al., 2015). The paired  $t$  test enabled me to recognize when the reported and economic earnings represented significantly different paired values for the same firm year before and after adding the adjustment called the discretionary item or amount. The paired  $t$  test enabled me to evaluate each firm year pair for substantive difference (Smith, 2014). I calculated the test statistic and compared it to a critical value representing 90%

confidence, where  $p = .10$ . If the test statistic for a given firm year equaled or fell below the set point value,  $p \leq .10$ , then I rejected the null hypothesis and recognized a statistically significant difference existed (Dixon et al.). I repeated the test for segment's sets of pairs.

The research among the listed firms in the European Union in many nations focused on the legal environment enabling or allowing historical practices and behaviors of earnings management among managers to continue. Virtually all of Europe, the United Kingdom and Ireland the notable exceptions, reflected a code law legal system which supported permanent conservatism as a reporting philosophy (Brown et al., 2014). The firms domiciled in code law nations of Europe provided the study cases for analysis as segments in my study. I listed them in Table 7.



Table 7.

*The Population of Listed Firms for European Union Code Law Nations*

Nation <sup>a</sup>	Listed firms <sup>b</sup>	IFRS user	Firms U.S. listed <sup>c</sup>	Forbes nonbank 2000 <sup>d</sup>
Austria	142	Yes	23	5
Belgium	154	Yes	27	11
Denmark	174	Yes	31	10
France	862	Yes	91	64
Germany	665	Yes	90	50
Italy	279	Yes	62	29
Netherlands	105	Yes	38	24
Portugal	46	Yes	18	6
Luxembourg	138	Yes	7	0
Spain	3,167	Yes	50	28
Sweden	332	Yes		18
Totals	6,046		437	245

*Notes.* <sup>a</sup> Adapted Code Law Nations from Brown et al. (2014).

<sup>b</sup> Adapted from World Bank (2016).

<sup>c</sup> Adapted from Top Foreign Stocks (2015).

<sup>d</sup> Adapted from Chen (2015).

I compared the paired values of normalized economic earnings versus reported earnings for each of the selected segment years (Peek et al., 2013). The nations in Table 7 were the segment nations. The industries in Table 8 were examples of industry segments using two-digit industry codes like Keung and Shih (2014). I calculated the economic earnings of each segment year, represented by the dependent variable,  $E_{iy}$ , by adding the discretionary item, the dependent variable  $D_{iy}$ , to the reported earnings, the independent variable,  $R_{iy}$ . The subscripts  $i$  and  $y$  represented the segment and year, respectively. Further, I normalized the values for economic earnings, the dependent variable,  $EN_{iy}$ , and reported earnings, the dependent variable,  $RN_{iy}$ , using total assets, the independent variable,  $T_{iy}$ . Normalizing the values as a rate, described in the work of Keung and Shih, facilitated comparing the segments year-to-year, effectively groups of firms based on the industries and nations as the selection criteria (Nichols et al., 2013). If the segment year reflected symptoms of earnings management, then I expected the difference to be statistically significant, such that I would reject the null hypothesis,  $H2_0$ . With that result, the significant differences enabled me to approve the research hypothesis,  $H2a$ . I used the paired Student's test, more generally known as the paired  $t$  test, to evaluate the differences for significance (Smith, 2014). I evaluated the difference for each of four segment years, the longitudinal period. Conversely, accumulating the four years could hide offsets, that is, equal but opposite amounts, among the results of the consecutive fiscal years, as demonstrated by Dechow et al. (2012). The collective years for each segment could obscure details providing insights (Dechow et al.) needed to interpret results and draw conclusions.

Table 8.

*Example Industry Groups in Q2 Segments*

Industry segments <sup>a</sup>	Codes
Energy	10
Materials	15
Industrials	20
Consumer discretionary	25
Consumer staples	30
Health care	35
Information technology	45
Telecommunications	50
Utilities	55

*Note.* <sup>a</sup> Adapted from the Keung & Shih (2014).

**Q3 With Hypotheses**

Q3: For the subset of firms that reported an earnings restatement for at least one fiscal year (during the study period), to what extent did differences (implying no earnings management) occur between the restatement amount and the economic earnings for the firm year observations? In this situation, failing to reject the null hypotheses implied that the management had been truthful (but belated) in correcting the accounts and had removed or reversed earnings management. Rejecting the null hypotheses supported the view that managers fulfilled their roles under the Agency and Stewardship theories with

respect to reporting earnings for investors (Al Farooque, 2016). The restated earnings amount differed from or did not match the economic earnings for that firm year.

*H3<sub>0</sub>*: There was no statistically significant difference between the economic and restated earnings.

*H3<sub>a</sub>*: The difference between the economic and restated earnings was statistically significant.

The question evaluated the cases where firms restated their reported earnings for a given fiscal year. The inquiry compared the restated earnings to the economic earnings (based on the discretionary item) for each occurrence, that is, a firm year observation. One firm could have multiple events (Files et al., 2014), each firm year representing an observation pair. My intent or research objective was to determine if the two or paired values were not statistically different. The non-significance supported the premise that the calculated discretionary item represented earnings management vis-à-vis the fact that management corrected the originally reported earnings to the restatement amount.

The paired *t* test compared the earnings, in this case the normalized amounts, to test for statistical significance occurring or existing between the paired values (Dixon et al., 2015). The paired *t* test recognized that the normalized (reported) restatement,  $PN_{fy}$ , and the normalized economics earnings,  $EN_{fy}$ , represented paired values for the same firm year before and after disclosing the earnings change. The paired *t* test determined if the difference between the amounts for each event was substantive for the observed firm year cases (Smith, 2014). I calculated the test statistic and compared it to a critical value representing 90% confidence, or  $p = .10$  (Dixon et al.). If the test statistic for a given year

fell below or equaled the set point value,  $p \leq .10$ , then I rejected the null hypothesis,  $H3_0$ , and recognized the lack of a statistically significant difference, which indicated the existence of symptoms of earnings management. For cases where the results, the test statistic, were less than or equal to .10, or  $p \leq .10$ , I would affirm the research hypothesis,  $H3_a$ .

### **Data Analysis for Restatement Discovery**

I coded a field for the firm year records where the restatement cases occurred based on the comparative financial statements. Prior researchers discovered the changes to a published year by comparing the next year's report to republished prior years' information. In Europe as in Australia, restatements proved elusive for non-disclosure, since the managers of the restating firms limited publicity and provided little visibility, which I coded as "3" in the database, as shown in Table 9. Hitz et al. (2012) analyzed the German exception cases made visible by their regulatory enforcement, while Loyeung et al. (2016) found restatements searching as stated above; Loyeung et al. compared published earnings year over year. After I flagged the restated firm years' records with a non-zero value and collected the restatement value, I evaluated the discretionary item, as described for  $Q3$ . Depending on my findings, in particular the number of cases, I might perform sensitivity analyses on the basis of showing and not showing earnings restatements in the published financial statements. I might also evaluate the propensity for earnings management in the financial statements of such firms, testing the periods preceding the date of the restatement, for earnings management attributes and symptoms. More details of the options followed Table 9 in my discussion.

Table 9.

*Restatement Codes to Isolate Case Discovery Sources*

Code for type	Restatement type
0	No apparent restatement of the financials
1	Regulatory disclosure or press release
2	Disclosure in notes to the financials
3	Analytical discovery using comparative statements

The restatement analysis followed the approaches of other, prior researchers. Aerts et al. (2013) focused on firms in the United Kingdom under the IFRS, Loyeung et al. (2016) investigated Australian restatements, and Strohmenger (2014) and Hitz et al. (2012) explored German restatements under the IFRS. I compared the propensity for restatement in this research question work to the earnings management behaviors among the other firms that did not restate their information. I searched for announcements and press releases for earnings restatements, coding the events with a “1” for these firms, as this category had the highest visibility and the most significance. I also searched the financial statement disclosures in reporting and code discovered occurrences with a “2” for tracking the disclosure approach. Only firms with disclosed or discovered restatements had a non-zero restatement code in my research database.

**Data Analysis for Evidence Using Descriptive Statistics**

Beyond evaluating the research questions, I used histograms for frequency distributions to identify the typical results and to highlight the outliers, perhaps at two

standard deviations, or  $+/- 2\sigma$ , following Dixon et al. (2015). I used descriptive statistics to stratify categories of financial activity. I segregated the typical firms from outliers within industries, and I found the evidence of earnings management where I found the attributes of suspected financial manipulation. I employed descriptive attribute codes, such as the nation or jurisdiction, following the 15 nation study of Europe from Zéghal et al. (2012). The firm's industry was another attribute to code, following several researchers like the Indian inquiry of Goel (2012) and the European study of Aerts et al. (2013). I expanded my analytics to include sensitivity analysis, as I needed to validate and further explore my apparent results to support my discovery process and conclusions. I added paired  $t$  tests for all firm years within the population as well as all the firm years within segments for Q1 and Q2. I extended the restatement testing for Q3 to include segments of nations and industries. I used descriptive statistics to analyze the input earnings data as well as evaluate results, including profiling the positive  $t$  tests where the  $p$  values rejected the null hypotheses. My research and analytics were dynamic, evolving to meet the needs and follow leads discovered during my work.

### **Inferential Statistics**

The analyses involved evaluating the statistical significance of the discretionary items for a firm as well as segments based on the paired Student's test or paired  $t$  test. As already discussed, the discretionary item was the difference between the annual economic and reported earnings for firms and the relevant segments, and I focused on a four-year period, from 2011 through 2014. I tested the differences for firms as well as the significance for each segment, including the jurisdiction or nation (Zéghal et al., 2012)

and industry (Aerts et al., 2013). The paired  $t$  test of the difference in the reported earnings versus the economic earnings, defined earlier, indicated the statistical significance of the difference, a  $p$  value at or below .10 or  $p \leq .10$ , inferring a small likelihood of natural occurrence and a 90% or greater probability of significance and non-randomness. The paired  $t$  test would indicate for each test sample that proved positive, where  $p \leq .10$ , that a given sample showed a 90% propensity for artificial occurrence, symptomatic of earnings management. (See Figure 1). Dechow et al. (2012) used the paired  $t$  test or Student's test for analyzing earnings management events, and the  $t$  test flagged anomalies in their results using a 90% confidence level. Zéghal et al. also identified significant differences as symptomatic of earnings management using the  $t$  test. My efforts focused on detecting earnings management symptoms in the earnings in published financial statements and measuring their significance and periodicity.

### **Data Collection**

I collected 5 years to analyze 4 years of annual, firm-year observations of secondary, financial statement data from financial databases, also called archival data. I started my data collection with fiscal 2010 and ran through 2014 for the selected nations in the European Union, as listed in Table 7. I used the first year, the 2010 balance sheet and sales values, for calculating amounts and rates of change starting in 2011 to provide four years collectively to analyze. I might consider collecting data starting in 2009, but definition testing in any database used was essential after Behn et al. (2013) identified significant data element definition changes after 2008 in the Compustat Vantage Industrial-Commercial file for their analysis of the IFRS users. The risk existed for other



archival data sets due to the IFRS pronouncements and changes taking effect. If I needed more information years, I would expand the selection to include 2015 first for information consistency. I was open yet reticent with respect to the potential use of 2009 data, as I would have to determine if any residual negative effects persisted in that first year with the definition change uncovered by Behn et al. and these authors' concerns using 2009 at the risk of hidden or unidentified distortions.

I collected financial reporting data sets from secondary data residing in online databases containing the annual financial statements of publicly held firm populations, following the work of other accounting researchers like Amewu (2014) and Tarca et al. (2013). Some needed information was not available in the source databases in prior studies; I supplemented selected and missing data from the online, published financial statements of individual firms when needed, as well as other sources following Goel (2012) and Loyeung et al. (2016). The Bloomberg database provide some of the needed information, although some down loaded financial elements needed disaggregation using the notes to the financial statements (Amewu, 2014). The Mergent database offered the financials for the European firms (Tarca et al., 2013), and the Amadeus and Osiris databases from Bureau Van Dyjk specialized in providing annual financial reporting and firm descriptive information for European firms (Candido et al., 2016). I could collect my research data from many sources.

Alternatively, the Compustat Vantage Industrial-Commercial file could provide needed data, based on evidence from Behn et al. (2013). I could use the Thomson Reuters Datastream Advance database like Lang et al. (2012) for their sample of multiple years of

financials for firms in 46 countries. I employed alternate sources like the published financial statements to find the firms' outstanding stock shares, crucial events like restatements, divestitures, and acquisitions, listing capital markets and stock exchanges, and other information potentially contained in notes and the management commentaries, following the example of Wee et al. (2014) and Loyeung et al. (2016).

The data collection design involved the assembly of disaggregated financial statement items over multiple years as the independent variables. The input data facilitated my analysis for the symptoms or attributes of earnings management among a selection of European, publicly traded firms in Western and Northern Europe. All balance sheet data elements carried a positive sign irrespective of their status as a debit or credit balance account, but the contra accounts reflected a negative sign. For example, I needed the depreciation and amortization accounts, but by example I could collect property assets net of depreciation, and then disaggregate the accounts as gross assets and accumulated depreciation, recognizing that the gross asset was naturally a debit but the depreciation was a contra (credit) account carrying a negative sign. My formulas recognized the natural sign of the assets versus liability and equity accounts as well as income statement accounts. I tracked changes and values relative to the reported earnings value and calculated the adjustments for the discretionary item for each firm year based on the impact of such accounts on the earnings.

All income statement items carried positive signs unless occurring as a negative result. For example, charges to sales would carry a negative sign since sales are naturally a credit. Credits in expense, such as a recovered impairment, would carry a negative sign

since expenses are naturally debits. If collecting cash flow info, which carried signs since cash elements could carry either sign, then I collected the sign to insure proper classification in the calculation of the discretionary item. The calculated fields, technically columns in the database, would recognize the appropriate sign of the input fields using the header of the field, to ensure the proper summation of groups of elements' fields. The assembly of the disaggregated financial statement items was integral to using the economic events for calculating the values for detecting earnings management attributes.

### **Independent Variables**

The independent variables were input information which I collected for my study as secondary data, using database fields of financial and related information. The related information included qualitative and statistical information, with qualitative data coded as nominal, numerical fields for analytical corroboration of perceptions and conclusions (Aerts et al., 2013). The independent variables included selected balance sheet accounts or totals and income statement accounts or totals (see Table 3). Alternatively, since some items, like depreciation, could occur in multiple cost classifications, I might source selected items from the notes and the statement of cash flows. Similarly, I might collect the published ratios and statistics in the notes and management commentaries, the fields shown in Table 10. In addition, the data set included fields for statistics, like stock shares, and qualitative data points, coded as needed, such as the domiciling country, industry, and other required information (see Table 10). The balance sheet accounts carried a positive sign as discussed above. Only contra accounts, such as asset reserves for

obsolete inventory, discounts on liabilities, and depreciation, showed as negative values. Similarly, all income statement elements carried a positive sign except where recognizing other income or where expense credits occurred, as well as for the calculated fields like operating income where a loss condition overrode the net income. The cash flows statement line items reflected the reporting sign since the sources and inflows were positive values and outflows and cash used carried a negative sign. Like net income, the net cash flow reflected its sign appropriately for accumulating the discretionary item by firm year.

Table 10.

*Database Fields for Descriptive Coding and Statistics*

Field	Code description	Text or value
Firm	Name of firm	Text
Industry	Name of the industry (or a code)	Text (or value)
Year	Fiscal year of the financial statement	Value
Trade symbol	Stock exchange symbol	Text
Restatement	Restatement status code (See Table 9)	Value
Stock shares	Number of shares outstanding	Value
Stock price	Market close value for the fiscal year	Value
Nation	Domiciling or home nation	Text

To build the data set, I initially downloaded selected financial statement line items from the balance sheet, income statement, and cash flow statement, as published and

stored in the data warehouses. Some data points and fields were stated in a summary or aggregate form due to the flexibility of the presentation standards in IFRS that allowed managers at the firms to use their discretion. I collected the information, separated as fields in a spreadsheet model, utilizing Microsoft Office Excel™ for its data storage features and calculation capabilities. The data fields, defined as independent variables, listed in Table 3, populated the columns in the worksheet database, including the financial accounts along with statistics like financial ratios, the stock shares issued, and the year-end share price as well as needed coding, shown in Table 10.

Each firm was a line or tow record in the Excel™ model or worksheet for use as the analytical descriptors and qualitative elements like the reporting year, restatement status, and others, with examples listed in database. The columns served as fields for the qualitative elements and codes, the annual values, and calculated fields. The model served as the database for easy storage, retrieval, and access as well as the means for the mathematical and statistical calculations, which facilitated the analyses for my study.

I loaded values from the financial note element values where aggregated lines items in the financial statement failed to reflect the detail level I needed for my calculations and analytics. I left open fields for the disaggregation of summary items, with examples shown in Table 11. For example, if the balance sheet showed only the summary account Accounts Receivable, then my next step was to identify and retrieve the breakdown or disaggregation statement accounts in the notes to the financial statements that I required for modeling. I segregated the summary statement item, labeled Aggregated Line Item in Table 11, into the separate or disaggregated elements, labeled

Disaggregated Elements in Table 11. The database that I built for the download of data reflected a data field for both the aggregated and disaggregated elements, effectively signaling that the data was ready with needed detail for analysis when disaggregated. Non-zero values in the aggregate fields of the database indicated that quality and detail problems persisted with the data collection program and the analysis database. If the data proved unavailable, then the firm was a candidate for rejection from the selection for the corrupted information based on its unavailability, addressed similarly by other researchers like Dierynck et al. (2012) and Aerts et al. (2013).

Table 11.

*Examples of the Disaggregation of Financial Statement Line Items*

Example category	Aggregated line item	Disaggregated elements
Current asset	Accounts receivable	Trade receivables Doubtful accounts Miscellaneous receivables
Short term liabilities	Current liabilities	Accounts payable Wages payable Accrued liabilities
Long term liabilities	Reserves	Discontinued operations Product liability Post-retirement benefits

**Dependent Variables**

The dependent variables result from the relationships for which the independent variables are input (Shanker, 2016). Also, the dependent variables are values including ratios, based on the elements of the financial statements as well as the statistics and the rates of change, as shown in Table 12. The discovery of evidence for and indicators of earnings management include recognizing validated proxies for different forms of earnings management. I will process the collected information using such tested models and algorithms to identify the earnings management cases present among firms in the sampled years collected.

Table 12.

*Dependent Variables and Covariables*

Name	Variable content	Type
$C_{gfy}$	Account $g$ value changes for a firm, $f$ , in a year, $y$	Currency value
$D_{fy}$	Discretionary item for a firm year	Currency value
$DN_{fy}$	Normalized discretionary item for a firm, $f$	A ratio of two currency values
$E_{fy}$	Economic earnings for a firm year	Currency value
$EN_{fy}$	Normalized economic earnings for a firm year	Currency value
$I_{gfy}$	Discretionary item content in an account, $g$	Currency value
$PN_{fy}$	Normalized restated earnings for a firm year, $fy$	Currency value
$RN_{fy}$	Normalized reported earnings for a firm year, $fy$	A ratio of two currency values
$S_{fy}$	Sales value for a firm, $f$ , in a year, $y$	Currency value
$S\%_{fy}$	Annual sales rate of change for a firm year, $fy$	A ratio of two currency values

*Note.* Naming assumptions for variable names appear in Appendix A.



### **Reliability and Validity**

Applying tested models for detecting the earnings management symptoms provided indications of reliability and validity. Dixon et al. (2015) differentiated the key concepts, describing reliability equating to consistency and validity equating with accuracy. While a valid measure was reliable and dependable, a measure that was reliable might not prove to be valid. The attributes spoke to the quality of the measures used in studying a situation such as earnings management (Dixon et al.). Models and measures for earnings management research from prior researchers, primarily in the United States, proved insightful for symptoms in firms under the U.S. GAAP as well as under the alternative accounting standards. I cited alternates like the foreign (domestic) GAAP sets and the IFRS in the other example nations where the earnings management research and testing occurred, using prior studies by Aerts et al. (2013), Yip and Young (2012), and Keung and Shih (2014).

Research programs executed in Australia, Canada, selected European nations, and other nations after adopting the IFRS, like Gopalan and Jayaraman's (2012) study of 22 countries, and in India prior to the IFRS adoption (Goel, 2012), affirmed the applicability of the discretionary accrual detection models available. Abernathy et al. (2014) found real transaction management based on class shifting or cost reclassification manipulated operating or sustainable earnings to infer increased future market value, effectively managing the perception of earnings. Chen et al. (2012) determined that real transaction management accompanied accruals earnings management. It was possible that I might affirm earnings management symptoms under the discretionary model combined with

real transaction management evidence. Applying the varied approaches and models for the earnings management symptoms facilitated reapplying tested programs and models to the firms of the European Union already established as dependable methodologies. The models were cornerstones for the work I pursued for the firms sampled among the selected European Union nations using the IFRS.

I searched for cases of manipulative or discretionary items using the model attributes validated by numerous researchers, including Gopalan and Jayaraman (2012) and Gerakos (2012), and other seminal works dating back over 20 years, like Jones (1991) and Schipper (1989). By example, Aerts et al. (2013) studied a sample of 160 firms in four, common law countries using such methods, including the United States, the United Kingdom, Australia, and Canada, where institutional protection for investors was robust versus the code law jurisdictions. Behn et al. (2013) reapplied the accruals models for their studies of classification shifting combined with real transaction management in firms in 40 nations where the authors focused on industry groups. Behn et al. collected the financial source data from secondary data in databases of financial reporting. The example studies supported the internal validity of methods as well as the data collection that provided external validity.

### **Reliability**

Many researchers published the application of the methods and models for detecting earnings management attributes, especially in the United States. Subsequently, other researchers used them for study programs targeting enterprises domiciled in Asia, Europe, Latin America, and Africa. Other researchers, like me, construed reliability to the

proxies and calculations attributed to detecting earnings management symptoms forensically in the published financial records. Numerous researchers attested to the widening reach as research programs applied the models to various geographies and jurisdictions or nations (Aerts et al., 2013), hence my reapplication to the selection of listed firms domiciled in code law nations of the European Union (Wallace, 1971).

In addition, the quality of the information published by firms for regulatory, lender, and investor needs contributed to the view of reliability. The statutory and public relations figuratively attached consequences when published financial information proved to be corrupted, false, or misleading for regulatory purposes and decision making by lenders and investors (Behn et al., 2013). They found firms practicing earnings management sacrificed the public trust and the regulators' confidence with inaccurate published data; the secondary information source proved reliable insofar as the source was reliable, that is, the database reflected the authentic published financials (Manyara & Benuto, 2014). Granted, my use of the earnings management methodology aimed to identify cases where published reporting reflected earnings management attributes, hence low quality reports, among at least some minority of reporting firms. These prior researchers demonstrated the dependability and consistency of the methodology as they explored varied cases and circumstances. The approach supported the researchers' need for the tested reliability espoused by the views of Wallace (1971) in his seminal work.

### **External Validity**

The external validity of my work depended on and developed from the works of prior researchers who deployed a variety of earnings management programs using

publicly held firms in the United States as well as in many domestic GAAP and IFRS jurisdictions or nations worldwide. The prior programs used their methods in varied environments. Schipper (1989) and Jones (1991) pioneered the use of the discretionary item to find symptoms of earnings management. Dechow et al. (2012) and Charitou et al. (2015) applied the longitudinal study for more effective earnings management investigations than cross-sectional work. The normalized earnings using total assets proved common and effective, based on the study by Keung & Shih (2014) for firms in different industries and of different sizes. The stratification of firms by jurisdiction (Brown et al., 2014) and industry (Goel, 2012) supported insightful conclusions. Stadler and Nobes (2014) recognized the increased risk and likelihood of earnings management in the code law nations. Ahmed et al. (2013) excluded selected industries, such as banking, financial services, and insurance companies, as their financial statements were dissimilar.

The works of prior researchers supported my work as they provided bases for the detection of earnings management attributes in the code law jurisdiction of Western and Northern Europe (Charitou et al., 2015). The four-year timeframe from 2011 through 2014 was sufficiently long to support multiyear modeling while avoiding significant evolution of IFRS, the governing accounting standards (Charitou et al., 2015). The European Union implemented mandatory use of IFRS in 2005 (Brown et al., 2013), and that start date provided five years of initial exposure and application for stabilizing reporting prior to the start of my study. The maturity factor potentially removed or mollified some reporting risk of errors pervasively publicized after the Australian IFRS

startup in 2005 (Loyeung et al., 2016). The figurative years of practice under IFRS prior to the study combined with the longitudinal duration of four years improved the likelihood of consistent use where intended for the entire period of study.

In addition, I sampled data among publicly held companies. The data for public firms was publicly available as archival information. Publicly held or listed firms were subject to the same reporting standards under the auspices of the European Union whose regulatory oversight and scrutiny reinforced and enforced the standards of IFRS (European Securities and Markets Authority, 2014). Granted, my study targeted the code law jurisdictions to explore their level of compliance in contrast to their behavioral and reporting traditions that tended to oppose the compliance (Brown et al., 2013). I searched for negative evidence (like non-compliant reporting) vis-à-vis earnings management attributes. Archival data presented validity as a secondary source, including the financial reporting databases and financial reports I targeted as my sources. The sources also provided external validity for the foregoing reasons, that is, they were public, followed IFRS, and were subject to regulatory oversight (Smith, 2014). The management of firms faced at least some consequences, both public awareness and the regulatory response, if determined to be inaccurate or invalid, as demonstrated in Germany (Strohmenger, 2014).

The Agency and Stewardship theories sustained the study as the relevant theoretical foundations, providing external validity by fitting the study into the broader accounting context from a normative perspective (Smith, 2014). The Agency theory supported the view that financial reporting served the user communities. The users were dependent on the reporting and Agency purported that the managers who prepared and

promulgated the reporting acted in good faith as objective agents of the financial statement users (He & Yang, 2014). Managerial self-interest presented the positivist or pragmatic view that managers undermined the good faith of statement users in favor of personal gain. The managers manipulated conditions to maximize their personal benefits over those of owners like shareholders and other financial statement users, following the work of Watts and Zimmerman (1978). This concept was a figurative alter ego for the Agency construct as it operated within the theory but demonstrated its corruption (Al Farooque, 2016). The Stewardship theory, also a normative construct, claimed that managers preparing the financial statements acknowledged and aspired to fulfil their fiduciary responsibilities to the statement users that they served as committed and devoted custodians of the responsibilities they held (Manyara & Benuto, 2014). The perception and empirical evidence supported the view that a minority of firms had managers exhibiting earnings management behaviors and manifesting the earnings management attributes with the objective for maximizing their (own) managerial self-interest. The minority, comprised of management teams and owners, undermined financial reporting accuracy of and faithfulness to the economics occurring for the businesses. Some managers failed to sustain the normative foundation and manifested the manipulative conditions targeted by my work, not unlike He and Yang found.

### **Internal Validity**

The multitude of inquiries in my selected methodology provided internal validity for the methodology. Trying to identify earnings management using one method risks or perhaps ensured excessive Type II, or false negatives, in my general research question

“Did this firm report earnings reflecting earnings management attributes?” Earnings management was an elusive attribute which could exist and persist undetected. Donelson et al. (2013) explored earnings management among the U.S. firms that published restatements; the authors backtracked through financial reporting and discovered greater than average earnings management symptoms heretofore undetected, hence I developed *Q3* to engage this approach. My search for symptoms using multiple methods supported discovery using more than one reliable approach and provided internal validity for the research program and its results by using combined and integrated approaches.

My planned search for earnings management attributes included testing multiple account categories for discretionary amounts, results that embraced income smoothing and targeting as confirmatory proxies and explored the restatement cases. The different ledger account categories facilitated analyzing a range of options for manipulative entries, non-routine items like reserves for special charges, as well as the routine estimates and accrued expenses. Identifying varied forms of earnings management attributes meant examining reported earnings beyond the earnings management models by identifying proxies like trends of earnings smoothing and targeting. The work also inferred starting with the reporting and finding restatement cases, then testing for the manipulated or discretionary items or elements. The multiple tools provided corroborating evidence and sought to avoid or minimize the Type I errors or false positives, another risk if basing the study on a single method for evidence (Wallace, 1971). Data selection bias created problems for internal validity. My plan alleviated the problem by collecting information for the largest 1,000 listed firms specified earlier from

the collective jurisdictions or nations of Western and Northern Europe, then selecting the largest 400 for my work that met the criteria listed earlier (Smith, 2014).

### **Other Background Discussion**

Earnings management was the subject of significant research in the United States but less research activity exposed earnings management attributes in the European Union. The historical and cultural norms of many members of the European Union meant business managers and statement preparers failed to view earnings management as problematic even though delivering manipulated financial statements to the many stakeholders, including investors, bankers, regulators, and market analysts (Gopalan & Jayaraman, 2012). Now the listed firms of the western and northern members of the European Union prepared financial reporting in conformance with the IFRS, since the 2005 mandatory adoption, while more recent members only recently adopted IFRS. The member nations applying IFRS appeared to tolerate the issuance of asymmetric information due to their weak enforcement laws and audit practices (Lai & Li et al., 2013). The principles of preparation under IFRS required transparency in reporting, but untested disclosures and inadequate investor protection provided little incentive for management teams to present high quality statements. The authors found the managers accustomed to manipulation when the actual results did not optimize the managers' preferences for reporting financial and operating performance (Nichols, Street, & Tarca, 2013).

The official position of IFRS notwithstanding, the research for robust prevention measures in the form of laws and their enforcement continued largely absent. The nations



demonstrated a *laissez faire* perception for conformance with the standards within their jurisdictions and their financial markets and the global investment community. Most European nations conformed with IFRS but functioned under code law (Fearnley & Gray, 2015). Since IFRS enabled flexibility in determining the financial reporting and accounting policies of firms applying them, audit quality and robust enforcement were needed safeguards to ensure decisions were rational and appropriately reflected the economics of the business applying the options available within the standards (Akdogan & Ozturk, 2015). In addition, absent regulatory oversight, the application of appropriate practices was questionable, based on the work completed heretofore by researchers like Peek et al. (2013). Even the figurative flags for earnings management (like the restatement of issued financial reporting) failed to warrant the visibility demanded by the U.S. jurisdiction historically and only recently in Germany, a lone example among code law European nations, related to publicly held companies (Hitz et al., 2012).

The European jurisdictions had only sporadic earnings management studies published as evidence of academic inquiries highlighting the problem (Stadler & Nobes, 2014). Earnings management symptoms interfered with the equitable distribution of capital flowing from domestic investors and direct foreign investment sources, based on Alves' (2014) work in Portugal and the work of Campa and Donnelly (2012) in the United Kingdom and Italy. Sophisticated analytical techniques could expose the manipulation of the reported earnings and valuation of firms, but the myriad of small investors and private individuals attempting to manage personal portfolios faced potential financial risk invisible to them due to the asymmetry created by the deceptive reporting

(Employee Benefits News, 2014). Beneish et al. (2013) found that the earnings management subjected the small investors to collateral damages. Increased transaction cost for regulatory oversight eroded returns while improving reporting, but its visibility also clouded their confidence in reports.

Research demonstrated the potential for unbridled earnings management due to the inadequacy of regulatory oversight and auditing effectiveness (Stadler & Nobes, 2014). The intent of the European Commission did not dictate but only recommended compliance among all the members of the union as they were sovereign nations that exercised autonomy for their benefit (European Commission, 2014).

### **Summary**

One final area of evidence involved the nature of the contribution by the research to knowledge and society. My study applied to and supported improving the financial reporting environment, providing for valid and quality investment choices in deploying capital whether domestic or foreign investment across the global capital markets (Alves, 2014). The microeconomic view serviced the regulators, investors, and analysts collectively with tools to identify the symptoms of earnings management. My primary purpose for social benefits recognized the need to protect the unsophisticated investors who used the published, financial information for their personal investments and savings (Asli-Basoglu & Hess, 2014). In addition, my study sought the invalidity integral to managers at public firms reporting earnings exhibiting earnings management symptoms and related manipulations. Accounting standards evolved over time, and the brevity of the research period (2011 through 2014 financial reporting) minimized the variation

integral to such standards. The brief, four-year period facilitated the potential effectiveness of the research models by limiting the regulatory variations (Aerts et al., 2013).

To close this discussion, I affirmed a plausible definition of earnings management (from a seminal researcher) as the manipulation of reported earnings with the intent to mislead some stakeholders, generally labeled outsiders who were non-controlling, for the benefit of insider stakeholders, generally managers and selected, majority owners (Schipper, 1989). Avoiding the injury to the outsiders and detecting risks thereof was my socially responsible focus for this study.

In Chapter 4, I introduced my study with the purpose and stated the research questions. I recapped my data collection, addressing the data integrity and my modeling for analyses as well as discussing my logic for calculating my dependent variables and statistics. I proceeded with the analyses for each research question in detail and finished with a summary of findings related to the study in Chapter 4. I introduced Chapter 5.

## Chapter 4: Results

### **Introduction: Purpose and Preview**

The purpose for this quantitative study was to forensically examine the symptoms and cases of earnings management among listed firms in selected European code law nations. I used a longitudinal method to find earnings management symptoms manifested as excessive discretionary accruals using various tests (see Dayanandan et al., 2016). I compared reported and economic earnings for statistically significant differences (see Govendir & Wells, 2014). I evaluated the statistical significance using Student's *t* test methodology (see Dechow et al., 2012). I identified restatement cases, and I compared the restated and economic earnings for matches to uncover earnings management effects (see Loyeung et al., 2016). The design was longitudinal, and I used secondary data for 4 years (see Watrin et al., 2014) from online databases and corporate websites (Tarca et al., 2013). I excluded (deselected) banking, financial, and insurance firms (see Dechow et al., 2012). The independent variables included the reported earnings, restated earnings, sales (revenue), and total assets. The dependent variables were the reported and economic earnings normalized using total assets (see Keung & Shih, 2014). I calculated the economic earnings by adjusting the reported earnings for the discretionary amount, the management earnings adjustments (see Brown et al., 2014).

I segmented the discussion components into sections for Chapter 4. I identified the research questions with the hypotheses in the next section. I then detailed the data collection in the following section, which specified the target population as well as the selection criteria for the research subject firms. I analyzed the collected data for each of

three research questions in the next sections, providing descriptive statistics of the populations and segments by nation and firm. I highlighted crucial elements and relationships with tables and graphs. In the final section, I provided a brief summary to conclude the analytics and developed the transition to the concluding Chapter 5.

## **Research Questions and Hypotheses**

### **Q1 With Hypotheses**

Q1: To what extent did earnings management differences occur between reported and economic earnings in each firm year?

A significant difference would support the view that managers were not faithful to their roles under agency and stewardship theories with respect to the quality of earnings reported to investors, implying the occurrence of earnings management (Al Farooque, 2016).

$H_{10}$ : The difference between the economic and reported earnings was not statistically significant.

$H_{1a}$ : The difference between the economic and reported earnings was statistically significant.

### **Q2 With Hypotheses**

Q2: To what extent did earnings management differences occur between reported and economic earnings for a segment of firms (in an industry or domiciled in a nation) in a year?

A significant difference would support the view that managers were not faithful to their roles under agency and stewardship theories with respect to the quality of earnings

reported to investors, implying the occurrence of earnings management (Al Farooque, 2016).

*H2<sub>0</sub>*: The difference between the economic and reported earnings for a given segment was not statistically significant.

*H2<sub>a</sub>*: The difference between the economic and reported earnings for a given segment was statistically significant.

### **Q3 With Hypotheses**

Q3: For the subset of firms that reported an earnings restatement for at least 1 fiscal year (during the study period), to what extent did differences (implying no earnings management) occur between the restatement amount and the economic earnings for the firm year observations?

In this situation, failing to reject the null hypotheses implied that the management had been truthful (but belated) in correcting the accounts and had removed or reversed earnings management. Rejecting the null hypotheses supported the view that managers fulfilled their roles under the agency and stewardship theories with respect to reporting earnings for investors (Al Farooque, 2016). The restated earnings amount differed from or did not match the economic earnings for that firm year.

*H3<sub>0</sub>*: There was no statistically significant difference between the economic and restated earnings.

*H3<sub>a</sub>*: The difference between the economic and restated earnings was statistically significant.

## **Data Collection Results**

The secondary data came from financial report databases for listed companies. Bureau Van Dyk (Candido et al., 2016), Bloomberg (Amewu, 2014), and Morningside (Tarca et al., 2013) were the databases that I used for my data sources. An initial collection of about 1,000 firms in industries excluding banking and financial services served as the raw data. I identified firms with incomplete information using a review of the information collected. Generally, I excluded the firms with missing years for startup after 2010 and ceasing business before 2014. The target firms were large companies, supporting my rejection (or de-selection) of firms reporting below € 1 billion (euros) of total assets in 2014, shown in Table 13. Due to the aggregation or summary nature of financial statements, I searched online annual reports for some data elements that were generally unavailable from the data download, such as depreciation and amortization costs as well as the goodwill asset balances. Four hundred thirty-two firms domiciled in 11 code law nations of Western and Northern Europe served the longitudinal study for the years 2011 through 2014, and the nations represented one segment grouping for the study, listed in Table 14. The 432 firms represented nine industry segments based on the Global Industry Classification Standard (GICS) code at the 2-digit, industry sector level (Aerts et al., 2013), shown in Table 15. I had anticipated the number of firms to study to be about 400, meaning the 432 count exceeded the expectation but not by an unreasonable margin.

Table 13.

*The Final Count of Selected Firms After Deselection of Other Firms*

Description	Action	Firm count
Banks and financial services	Deselected	259
Data gaps and low assets value	Deselected	548
Firms for study	Selected	432



Table 14.

*The Count of Selected Firms in Nation Segments*

Model abbreviation	Nation segment	Count for firms
AT	Austria	18
BE	Belgium	20
DE	Germany	96
DK	Denmark	21
ES	Spain	36
FR	France	114
IT	Italy	40
LU	Luxembourg	10
NL	Netherlands	30
PT	Portugal	11
SW	Sweden	36
	Total firms	432

Table 15.

*The Count of 432 Selected Firms in Industry Segments*

GICS code	Sector as industry segment	Count for firms
10	Energy	21
15	Materials	48
20	Industrials	136
25	Consumer discretionary	80
30	Consumer staples	36
35	Healthcare	36
45	Information technology	27
50	Telecommunications	15
55	Utilities	33
	Total firms	432

*Note.* The GICS code is the Global Industry Classification Standard (two digits).

The selection of 432 firms included the larger listed firms from the nations studied. The minimum total asset value in 2014 was over € 1 billion (euros) and the largest was over € 351 billion (euros), shown in Table 16 with other descriptive statistics. Figure 2 graphically displayed the descriptive statistics (excluding the minimum) for the 2014 Total Assets. The firms averaged just below € 16 billion assets while the median was below € 5 billion, demonstrating that the smaller firms skewed the distribution and drove the gap in the mean and median (euros). The minimum net sales value in 2014 was over € 120 million and the largest was over € 202 billion (euros), shown in Table 16 and

graphically in Figure 2 with other descriptive statistics values. The firms averaged just below € 11 billion (euros) annual sales while the median was below € 3 billion (euros), confirming how the sales of selected firms skewed toward numerous smaller firms with lower sales offset by a few very large firms, comparable to the assets discussed earlier. For both assets and sales, the large firms drove the gap between the mean and median; the large firms were visually apparent in the area chart below. The area chart in Figure 3 reflected the 2014 sales and assets for all firms individually, excluding the peaks of the max and second largest, Volkswagen AG and Electricite De France SA, respectively, which represented (graphic) outliers. The trend showed 90% of the firms fell below € 40 billion sales and assets in 2014, and 70% fell below € 10 billion in assets.

Table 16.

*Selected Descriptive Statistics of the Selected Firms*

Values in thousands of euros	2014 total assets	2014 net sales
Max	€ 351,209,000	€ 202,458,000
Minimum	€ 1,006,601	€ 121,717
Mean	€ 15,814,795	€ 10,475,848
Median	€ 4,684,519	€ 3,158,034
Standard deviation	€ 33,706,885	€ 20,480,879
Firm count (no scaling)	432	

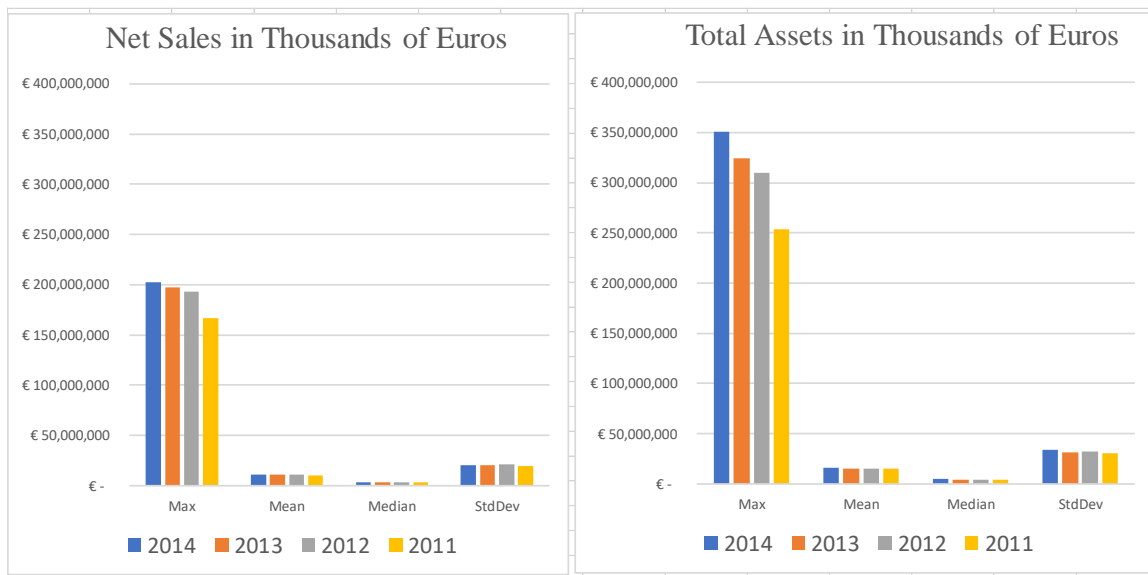


Figure 2. Bar charts of descriptive statistics for four years of net sales and total assets.

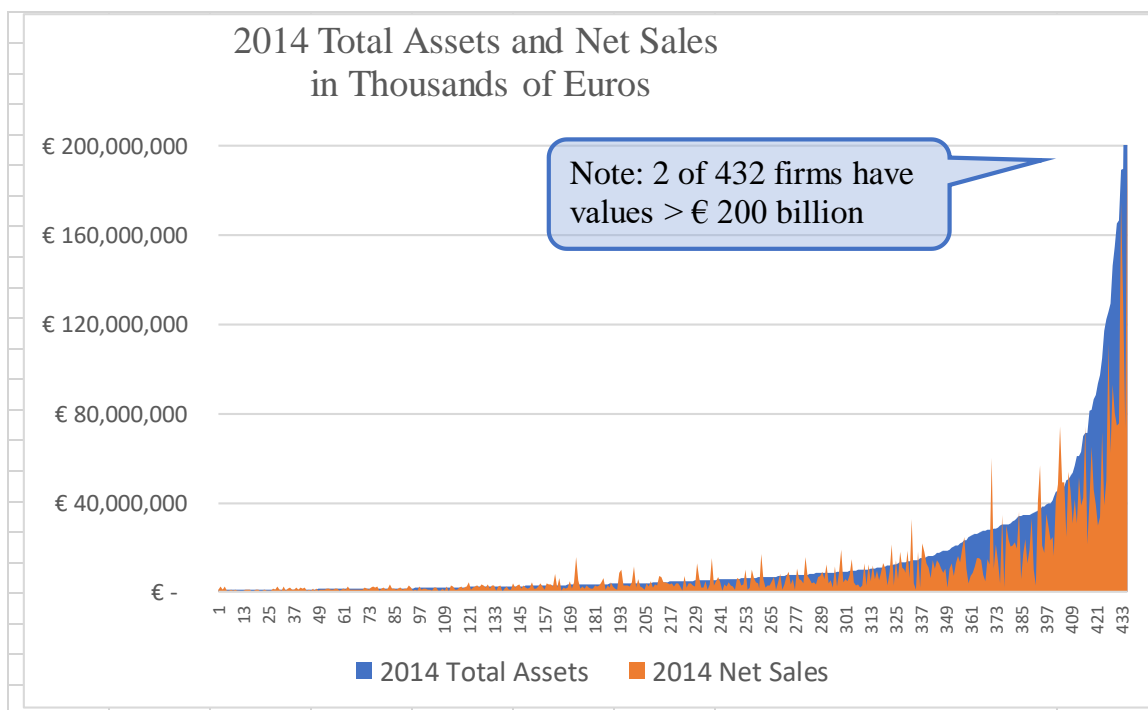
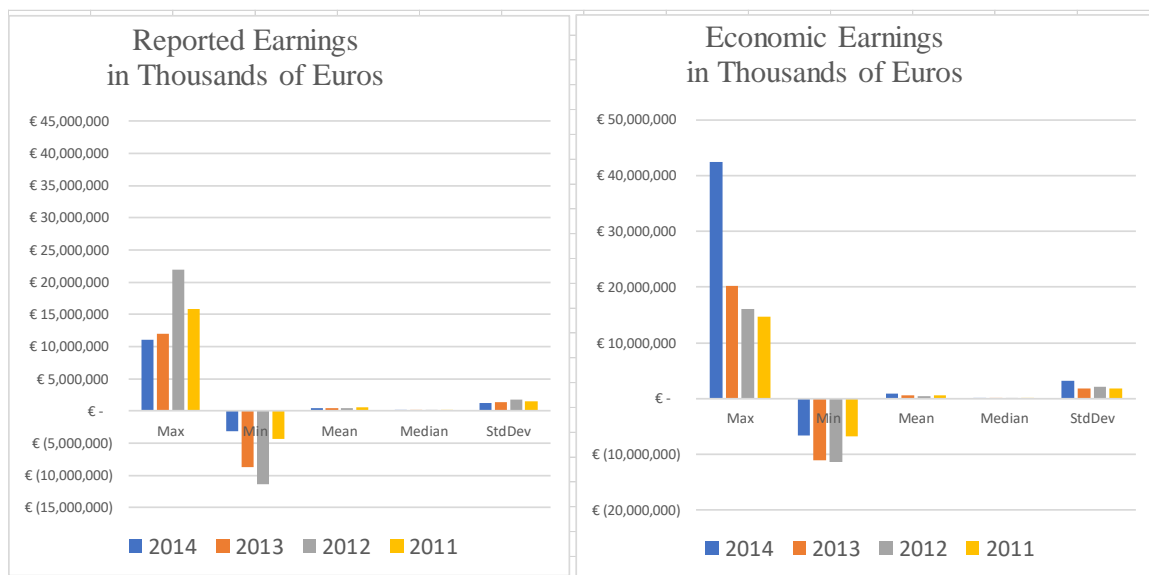


Figure 3. Area chart of 2014 total assets and net sales in euros.

The trend of the reported and economic earnings showed dramatic differences in their four-year trends of descriptive statistics. The reported earnings reflected a declining trend in the annual maxima while the trend steadily rose for the economic earnings, peaking at double the 2013 value in 2014, graphically displayed in bar charts by year in Figure 4. The minima for each year pointed downward; they were all losses (negative values). Conversely, the peaks were in the two central years, 2012 and 2013 while the outlier years, 2011 and 2014, showed more nominal values. The annual means and medians were short bars as their values were about € .50 and € .15 million (euros) each year, respectively. They were relatively small values compared to the maxima. These measures of central tendency varied far less year-to-year than the magnitude of the prior measures. The standard deviation of each year for the reported earnings ran from € 1.2 to € 1.6 million (euros) while the annual measure for economic earnings varied over a higher and broader range, from € 1.9 to € 3.3 million, shown in the Figure 4.



*Figure 4.* Bar charts of descriptive statistics for four years of reported and economic earnings.

### **Q3 Restatement Data Collection**

The third research question required additional information, the subset of the selected, target firms that restated the reported earnings for at least one year during 2011 through 2014. The restatement flag field requested and expected in the data download proved unpopulated even though defined. The alternative method was to review the annual financial statements in subsequent years to discover changes in the comparative or prior reported years, as did Loyeung et al. (2016). The discovery of earnings restatements required a comparison of reported earnings in the years following the initial publication. Restated earnings appeared for 124 firms or 29% of the 432 study cases. Some firms had at least two years showing restatements; 240 firm years or 14% reflected changes among the 1,728 firm years in the study, displayed in Table 17. Not an insignificant minority, more than 86% of the reported annual earnings by firm year, shown in Table 17,

remained as reported in the financial reports of the years following their initial publication. The publication of restated reported earnings indicated cases where errors and corrections required changes to prior reporting. Excluded cases included new organizational structures, like mergers, as well as the application of new accounting standards under IFRS promulgated by the International Accounting Standards Board. I designated a type code for the classification of restatements as published or disclosed, and I discussed and listed the codes in Table 9. The classification process involved online searches for news releases and references in the notes to the financial statements, the results of which will be discussed under the analysis section for earnings restatements.

Table 17.

*Number and Proportion of Firms and Firm Years by Restatement Type*

Code	Restatement status and code for type	Firms	Firm years
0	No apparent (discovered) restatement of the earnings	308	1,488
	Proportion of total with no restatements	71%	86%
1	Regulatory disclosure or press release (Type 1)	2	6
2	Disclosure in notes to the financials (Type 2)	4	7
3	Analytical discovery using comparative statements (Type 3)	118	227
	Subtotals for reported earnings restatements	124	240
	Proportion of total with restatements	29%	14%
	Totals	432	1,728

*Note.* Restatement type codes listed in Table 9.

**Data Integrity Testing**

I tested the line item data by year for example firms against online annual reports to validate the data downloaded from databases. I checked the crucial amounts for total assets, net sales, and reported earnings as well as other accounts randomly for the needed years as an independent, external validation of the downloaded information. I collected the industry code and line of business for descriptors as well as the detailed values not captured as disaggregated lines on the financial statements, such as depreciation and amortization, accessing the public, published, financial reports online on company corporate websites and the Morningside and Bloomberg online web sites.



### **Methods for Analytical Calculations**

I applied the generalized formulas from the Proposal research model in Chapter 3 and built the needed functions in a MicroSoft Excel™ workbook for processing the raw data to calculate the normalized reported ( $RN_{fy}$ ) and economic ( $EN_{fy}$ ) earnings by firm year. I created worksheets listing all firms with the descriptive coding and financial information in the model to sort by each nation segment. After the data validation described earlier, I copied the worksheet and sorted the firms by the GICS indicating the sector-based industry segments. I appended sets of formulas for developing the paired  $t$  tests and descriptive statistics of the segment groups and the selection of firms as a whole.

### **Modeling Logic of the Discretionary Item**

The discretionary item represented an adjustment to the reported earnings for calculating the economic earnings, discussed in detail in Chapter 3. The components of the discretionary item included asset, liability, and income statement accounts, also detailed in Chapter 3. Conceptually, when the assets increased (decreased) more (or less) than the change in sales for that year, generating an accounting ledger debit (credit) entry, the potential offsets included a liabilities credit (debit) and an income statement credit (debit) to revenues or expenses. The liability offset effectively cancelled the asset amount while the income statement change increased (decreased) the reported earnings (absent the tax consequences). The Excel workbook modeled the relationships to adjust earnings.

Similarly, when liabilities increased, generating an accounting ledger credit entry, the potential offsets generated either an assets debit or an income statement debit to

reduce the revenues or increase the expense accounts. The asset offset effectively cancelled the liability amount while the income statement change decreased the reported earnings (absent the tax impact). In modeling, the liability function required the difference to reflect a reversal of the sign of the change, since the download brought all liabilities as positive values, effectively reversing the sign of the difference for proper discretionary item summation. When expenses from the income statement increased, generating an accounting ledger debit entry, the potential offsets included a liabilities or assets credit and potentially an income statement credit to reclassify the amount from other accounts. The income statement offset effectively cancelled the revenue or expense amount relative to earnings within the income statement. Conversely, the balance sheet (assets or liability) changes decreased the reported income (absent taxes).

### **Calculations Logically Grouped for the Discretionary Item**

The discretionary item,  $D_{fy}$ , is the amount that differs from the normal, predicted change for the firm's specified accounts based on the rate of sales change for a firm year (Gray, Kang, Lin, & Tang, 2015), starting with the second year of the series 2010 to 2014

$$D_{fy(2,5)} = \sum(\text{Current Specified Accounts } (gfy_{(2,5)})) - ((1 + \Delta \text{Sales}\% (fy_{(2,5)})) \times \text{Prior Specified Accounts } (gfy_{(1,4)}))$$

showed the logic and  $D_{fy(2,5)} = \sum I_{gfy} = \sum (A_{gfy} - ((1 + S\%_{ofy}) \times A_{gfy-1}))$  was the model, where  $g$  represented one specified or selected account for a firm year,  $f$  and  $y$ , respectively, with details following in the discussions below.

The discretionary item,  $D_{fy}$ , was the sum of the discretionary content,  $\sum I_{gfy}$ , of changes in selected asset, liability, and expense account groups, identified by subscripts  $a$ ,  $b$ , and  $c$ , respectively. The independent variable  $A_{gfy}$ , where  $g$  specified the logical

account groups, sourced selected account values. The accounts and subtotals appeared in Table 18.  $D_{fy(2,5)} = \sum I_{gfy} = \sum (A_{gfy} - ((1 + S\%_{ofy}) \times A_{gf(y-1)}))$  was the model, where  $g$  represented one group of accounts for a firm year,  $f$  and  $y$ , respectively, and prior year,  $f-1$ , with the details following. The modified model with subtotals by logical subtotal was  $D_{fy(2,5)} = \sum I_{gfy} = I_{afy} + I_{bfy} + I_{cfy}$ , where the subscripts  $a$ ,  $b$ , and  $c$  represented the asset, liability and expense accounts, respectively.

The subtotals in Table 18 showed the accounts grouped or stratified for calculating the discretionary item to facilitate modeling and analytics, a technique not recognized in the Proposal. The segregation of the values at the subtotal levels for the assets, liabilities, and income statement supported reviews and sensitivity analyses. For example, the listed assets from Table 18,  $\sum A_{afy}$ , where  $a$  was the subset of individual accounts from the balance sheet assets, carried positive signs and the formula of current less prior years' account balances,  $\sum I_{afy} = \sum (A_{afy} - ((1 + S\%_{ofy}) \times A_{af(y-1)}))$ , provided the correct or applicable calculation sign for adjusting the reported earnings. The balance provided the value change with the right sign for the discretionary item (adjustment) to add to the Reported Earnings,  $R_{fy}$ , for calculating the Economic Earnings,  $E_{fy}$ . Liabilities,  $\sum A_{bfy}$ , naturally and financially carried a negative sign. The formula reversed, such that  $\sum I_{afy} = \sum ((1 + S\%_{ofy}) \times A_{bf(y-1)}) - (A_{bfy})$ ; the model formula switched to the prior year less the current account balance to provide the value change with the correct calculation sign for the discretionary item (adjustment) to add to the reported earnings for calculating the economic earnings. Income statement items,  $\sum A_{cfy}$ , individually carried positive and negative signs for the revenue and income versus the expenses and losses, respectively.

The formula of the current less prior income statement expense account balances, comparable to the assets formula,  $\sum I_{cfy} = \sum (A_{cfy} - ((1 + S\%_{ofy}) \times A_{cf(y-1)}))$ , where the subscript  $c$  identified the expense account group, provided the value change with the right sign for the discretionary item (adjustment).

Table 18.

*The Variables: Specified Accounts and Subtotals for Analytical Modeling*

Name	Statement or notes item	Breakdown or disaggregation of elements
$A_{gfy}$	Current assets	Accounts receivable and inventories
$A_{gfy}$	Long term assets	goodwill
$\sum I_{afy}$	Subtotal (a)	Discretionary item—assets
$A_{gfy}$	Current liabilities	Noninterest-bearing accounts
$A_{gfy}$	Long term liabilities	Pensions, provisions and reserves
$\sum I_{bfy}$	Subtotal (b)	Discretionary item—liabilities
$A_{gfy}$	Notes to statements	Research and development expense
$A_{gfy}$	Notes to Statements	Depreciation and Amortization expense
$A_{gfy}$	Notes to statements	Unusual, infrequent and extraordinary costs
$\sum I_{cfy}$	Subtotal (c)	Discretionary item—expense
$R_{fy}$	Income statement	Reported earnings, or net income
$S_{fy}$	Income statement	Sales or revenues
$T_{fy}$	Balance sheet total	Total assets

For each firm, the discretionary item amount,  $D_{fy(2,5)}$ , was the factored change in the account group value each year, whether negative or positive, based on the change in the sales (or revenue) value,  $S\%_{fy}$ . The discretionary item,  $D_{fy}$ , carried the excess or shortage of the value change versus the change in sales to add to the reported earnings for calculating the economic earnings for one year, such that

$D_{fy(2,5)} = \sum I_{gfy} = \sum (A_{afy} - ((1 + S\%_{fy}) \times A_{af(y-1)}))$ , where  $g$  identified the groups of assets, liabilities, and expense accounts listed and subtotaled in Table 18.

### **Analyses for the Research Questions**

#### **Q1 Analysis**

Data for the Q1, included the collection of firm year observations and the yearly segments of the four-year study period of 2011 through 2014. The 432 selected firms reflected the reported and economic earnings for each of the 4 years studied. The four years combined was a pool of 1,728 observations which reflected a  $p$  value of .0279, shown in Table 19, that rejected the null hypothesis. The combined pool provided an initial evaluation for the overall study by comparing the normalized reported and economic earnings. Viewed together as a single pool, the rejection of the null hypothesis indicated the significance of differences between the reported and economic earnings with a probability above 90%. The  $p$  value confirmed the existence of earnings management attributes among the firms during the four studied years.

Table 19.

*Results of the Q1 Paired T Tests Showing P Values and Hypothesis Tests*

Selection	4 years	3 years	2014	2013	2012	2011
432 firms, 1 year			.0573	.9675	.3234	.2150
Combined years	.0279	.0149				
Null hypothesis	Rejected	Rejected	Rejected	Failed	Failed to	Failed
$H_0$	the null	the null	the null	to	reject	to
$p \leq .10$				reject		reject

*Note.* “4 Years” identified  $t$  test results of the years 2014, 2013, 2012, and 2011.  
The title “3 Years” identified  $t$  test results of the years 2014, 2012, and 2011.

I segregated the years in the next analysis step, which showed a different result. The comparison of the 2014 normalized reported and economic earnings based on a paired  $t$  test generated a  $p$  value of .0573, shown in Table 19. While greater than the 5% level sometimes used (Dixon et al., 2015) already discussed and expanded in Appendix B, the  $t$  test at  $p \leq .10$  rejected the null hypothesis and indicated that the differences between the two earnings sets were marginally, statistically significant (Brown et al., 2014). For the year 2014, the firms collectively reflected earnings management attributes. Conversely, the earlier years, 2013, 2012 and 2011, showed higher  $p$  values, .9675, .3234, and .2150, respectively, all considered insignificant at  $p > .10$ , and shown in Table 19. The paired  $t$  test failed to reject the null hypothesis for 2013, 2012, and 2011. The differences between the reported and economic earnings were statistically insignificant showing probabilities below the 90% threshold. The reported earnings of the firm years

2013, 2012, and 2011 did not reflect earnings management attributes in the financial reporting of the 432 selected firms, based on the assumptions for evaluating the research hypothesis,  $H1_a$ , versus the null hypothesis,  $H1_0$ . The longitudinal model, stratified by year, exposed the earnings management attributes for 2014 and supported the view that the three prior years, 2013, 2012, and 2011, lacked such attributes.

**Q1 analysis of four years combined.** The whole selection of 432 firms showed statistically significant differences for the four years combined with a  $p$  value result of .0279 that rejected the null hypothesis. The  $p$  values, shown in Table 19, used the firm year set and annual subsets of the 1,728 observations, where  $1,728 = 432 \text{ firms} \times 4 \text{ years}$  of annual values. The mean normalized reported earnings was .0410 compared to the mean of .0464 for the normalized economic earnings. The median for the reported earnings was .0388 versus a median of .0448 for the economic earnings, shown in Table 20. Figure 5 showed the histograms or frequency distributions for the two results on the same scale to enable a graphic comparison. The frequency distribution for the economic earnings showed more and shorter classes, where the highest quantity (or frequency) was 508 in the largest class (of 4.5 = -.0150 to .0600, the lower and upper class limits, respectively). The reported earnings showed 833 observations for a comparable class of .0450, 50% more observations, and a second class showed a frequency of 163 observations. The standard deviation for the normalized reported earnings was .0552 versus a larger .1086 for the distribution of the economic earnings, shown in Table 20. The graphed results on the histograms showed the greater concentration or more centralized state of reported earnings results than observed in the economic earnings. The



scatter graph in Figure 6 showed the stream of results with a wide y axis, the vertical axis, scaled to capture the many extreme or outlying results. Based on the variation of the two standard deviations, the reported earnings focused on a band around the mean of about two thirds the width of the band for economic earnings, confirming the significant difference in the means and histograms already discussed.

Table 20.

*Measures of Central Tendency for Normalized Reported and Economic Earnings*

All four years	Reported earnings	Economic earnings
Mean	.0410	.0464
Median	.0388	.0448
Standard deviation	.0552	.1086

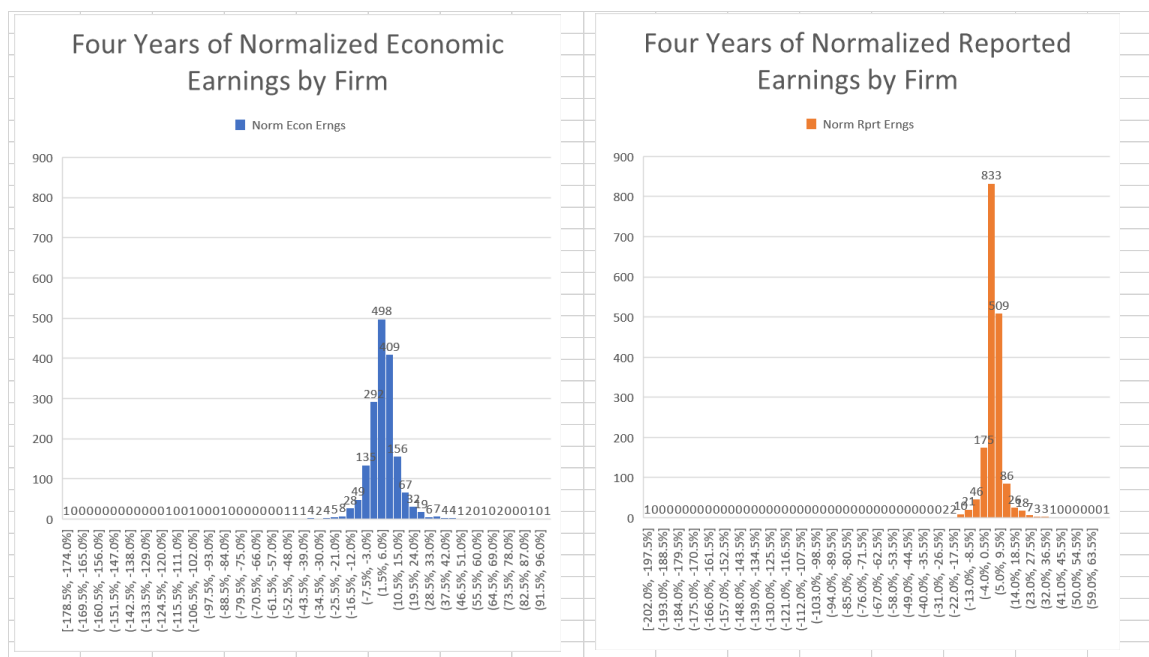


Figure 5. Histograms of four years of normalized reported and economic earnings.

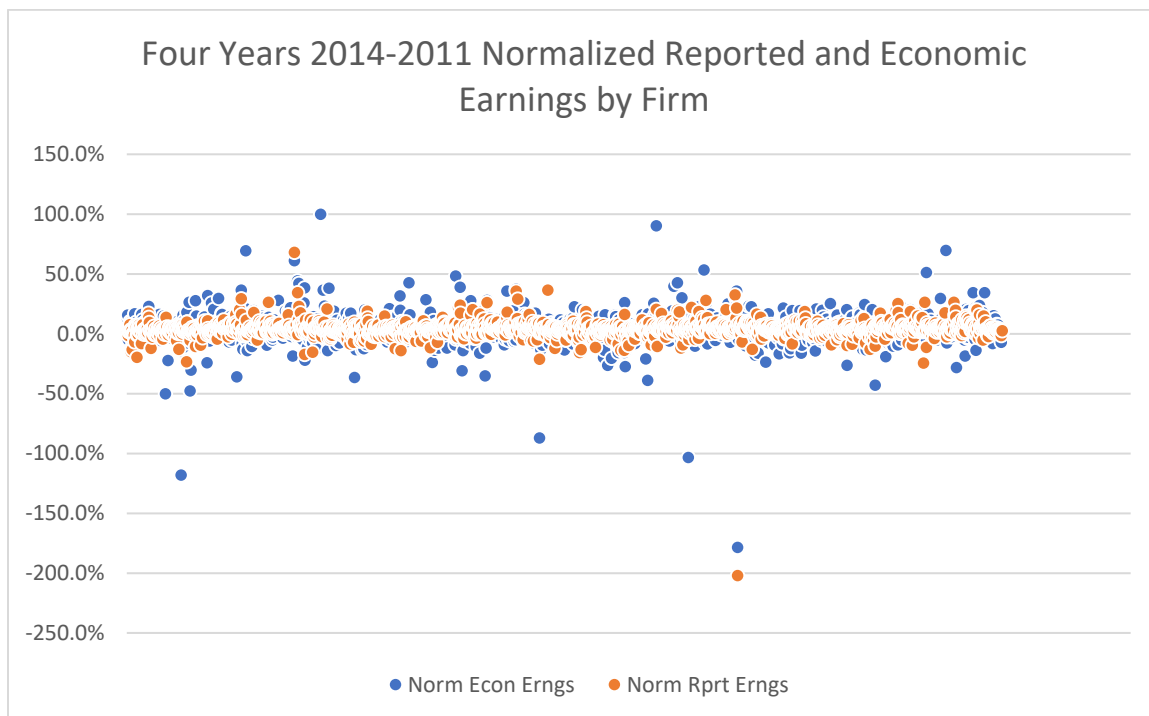


Figure 6. Scatter graph of four years of normalized reported and economic earnings.

**Q1 analysis of 3 years (2011, 2012, and 2014) combined.** The whole selection of 432 firms showed statistically significant differences for the three years combined, excluding 2013, with a  $p$  value result of .0149 that rejected the null hypothesis using the 1,296 firm years, a function of 432 firms for 3 years. The year 2013 and its 432 firm years reflected an extreme  $p$  value of .9675, shown in Table 19; the 3-year  $p$  value confirmed the distorting impact of the extreme value in 2013 by reducing the overall or 4-year  $p$  value of .0279 for 1,728 firm year observations to the 3-year paired  $p$  value of .0149, both combined year or aggregate  $p$  values rejected the null hypothesis based on  $p \leq .10$ . The mean normalized reported earnings for three years was .0418 or 4.18% compared to the mean of .0490 or 4.90% for the normalized economic earnings. The

median for the reported earnings was .0397 or 3.97% versus a median of .0460 or 4.60% for the economic earnings, shown in Table 21. Based on the variation between the two standard deviations, the reported earnings focused on a band around the mean of about half the area or width of the economic earnings, confirming the significant difference in the means, visually presented in the histograms already discussed for both the combined 4 years (1,728 observations) as well as the combined 3 years (1,296 observations). Like the  $p$  value for 4 years combined, the 3-year  $p$  value of .0149, where  $p \leq .10$ , rejected the null hypothesis and found the differences significant with a probability greater than 90%. The evaluation affirmed the presence of earnings management attributes in the three years, including 2014, 2012, and 2011.

Table 21.

*Measures of Central Tendency for Three Years' Earnings in 2014, 2012, and 2011*

Three Years **	Reported earnings	Economic earnings
Mean	.0418	.0490
Median	.0397	.0460
Standard deviation	.0553	.1120

*Note.* The table included the 1,296 observations from the 3 years 2014, 2012, and 2011.

**Q1 analysis for 2014.** The selection of 432 firms showed statistically significant differences between the economic and reported earnings in the year 2014 with a  $p$  value of .0573 that rejected the null hypothesis, where  $p \leq .10$ . The mean normalized reported earnings was .0386 or 3.86% for the year 2014, which statistically differed from the mean of .0498 or 4.98% for the normalized economic earnings with a probability greater than

90%. The median for the 2014 reported earnings was .0354 or 3.54% versus a median of .0459 or 4.59% for the economic earnings, shown in Table 22. Figure 7 showed the histograms for the two results on the same scale to enable a graphic comparison. The graph for the economic earnings showed more classes and shorter bars (or smaller frequencies), where the highest quantity (or frequency) was 120 in the most populous class (of 4.5 = -.0110 to .0340, the lower and upper class limits, respectively). The reported earnings showed a frequency of 185 observations for a comparable class of .0450 (= .0360 to .0810, the class limits), 50% more observations than in the highest frequency class of the economic earnings. Another class of reported earnings showed a frequency of 163 observations. The standard deviation for the normalized reported earnings was .0614 or 6.14% versus a larger .1298 or 12.98% for the frequency distribution of the normalized economic earnings, shown in Table 22. The graphed results in the histograms showed a greater frequency, a greater concentration, and a more centralized state of reported earnings results than observed in the economic earnings. The scatter graph in Figure 8 showed the stream of results with a wide y axis or vertical axis scale to capture the many extreme or outlying observations. The difference between the two standard deviations, .0614 for the reported earnings and .1298 for economic earnings, attested to the significance. The reported earnings focused on a band around the mean of about half the width of the economic earnings, confirming the significance of the differences in the means and in the histograms already discussed.

Table 22.

*Measures of Central Tendency for Normalized 2014 Reported and Economic Earnings*

2014	Reported earnings	Economic earnings
Mean	.0386	.0498
Median	.0354	.0459
Standard deviation	.0614	.1298

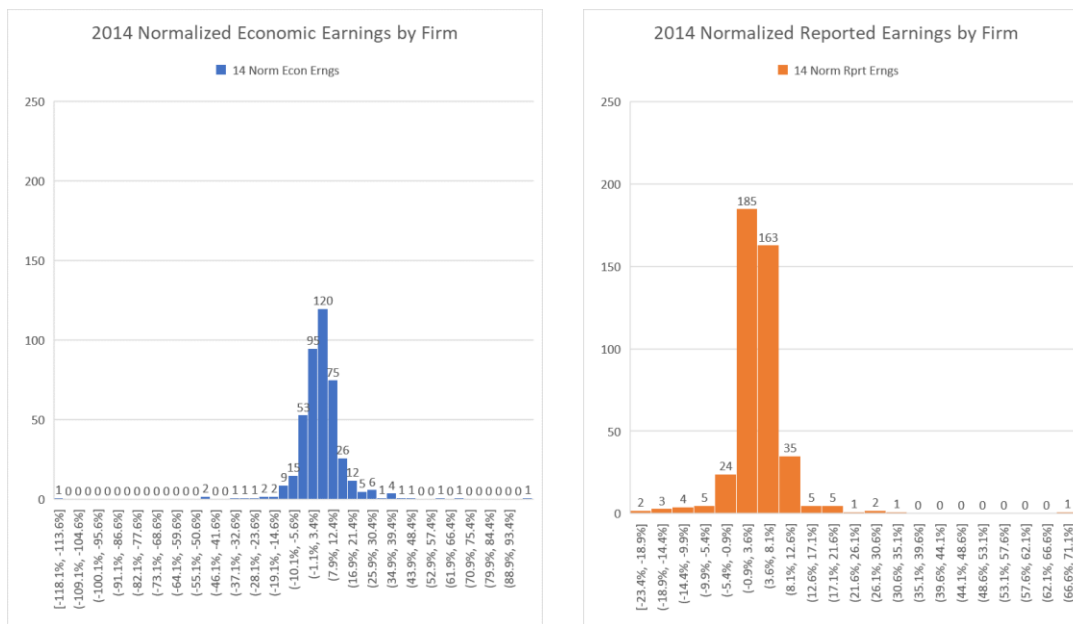


Figure 7. Histograms of normalized 2014 reported and economic earnings.

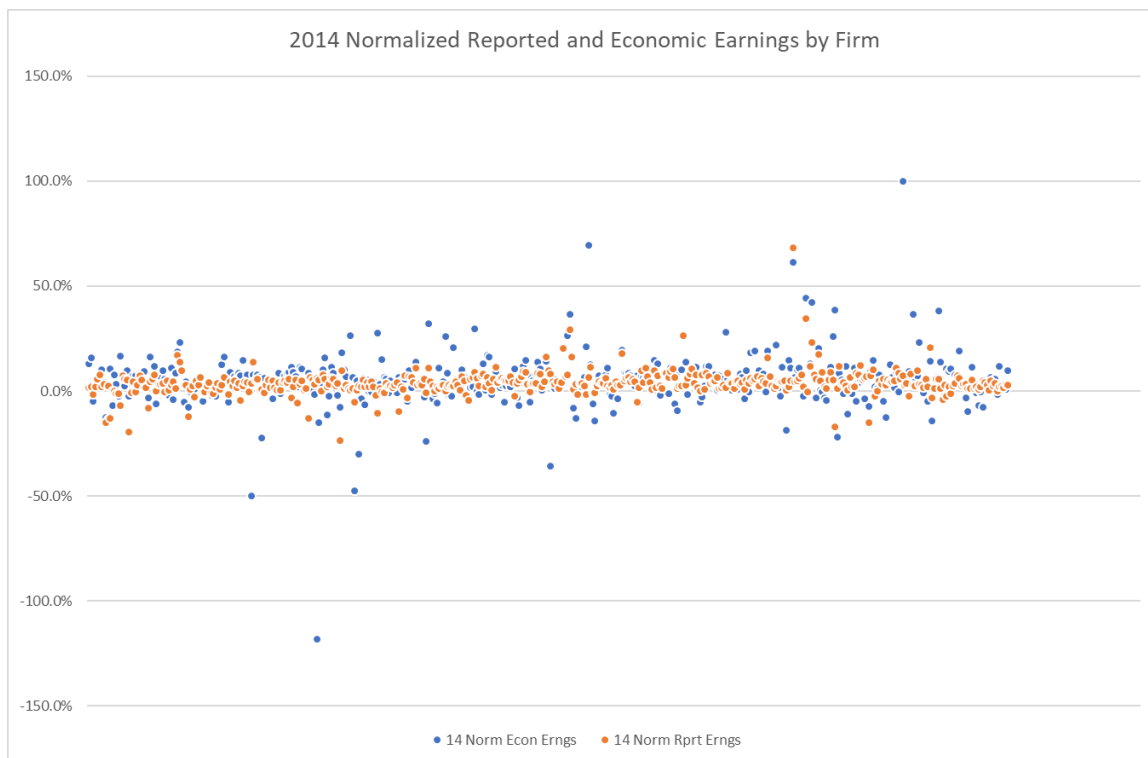


Figure 8. Scatter graph of normalized 2014 reported and economic earnings.

**Q1 analysis for the years 2013, 2012, and 2011.** The  $p$  values comparing the normalized reported and economic earnings failed to reject the null hypothesis,  $H_0$ , in the years 2013, 2012, and 2011. The extreme values in 2013 demanded segregating the discussion of 2013 measures, which now follows that for 2011 and 2012. The  $p$  values of paired  $t$  tests ran .2150 in 2011 and .3234 in 2012, shown in Table 23. The results indicated that the financial results vis-à-vis reported earnings did not reflect earnings management attributes based on the probability for non-randomness falling below the 90% probability level. As with 2014, the standard deviation of the normalized economic earnings was larger than the values for the reported earnings for 2012 and 2011, meaning larger variation ranges around the mean; the measures ran less than double for reported

earnings but double or greater for the two years of economic earnings. The means were also about 10% larger for the economic earnings than reported earnings, comparable to 2014 but less extreme in the increase, shown above in Table 23 and Table 22. The higher  $p$  values and the related failure to reject the null hypothesis indicated more randomness in the difference between each pair of normalized earnings, the reported earnings versus the economic earnings. The randomness indicated the reported earnings reflected natural rather than externally forced or artificially induced occurrence. The results indicated that managers at the selected firms did not manipulate the reported earnings in 2011 and 2012.

*Table 23.*

Measures for Normalized Reported and Economic Earnings for 2013, 2012, and 2011

	2013 earnings		2012 earnings		2011 earnings	
	Reported	Economic	Reported	Economic	Reported	Economic
Mean	.0386	.0388	.0411	.0460	.0456	.0511
Median	.0365	.0408	.0399	.0448	.0420	.0477
Standard deviation	.0549	.0974	.0523	.1126	.0514	.0904
$P$ values	.9675		.3234		.2150	

**Q1 discussion of 2013.** The  $p$  values comparing the normalized reported and economic earnings failed to reject the null hypothesis,  $H_0$ , in the years 2013, 2012, and 2011. The  $p$  values ran .2150 in 2011 and .3234 for 2012 versus the higher .9675 in 2013,

shown in Table 23. The values supporting rejection of the null hypothesis indicated that the financial results vis-à-vis reported earnings did not reflect earnings management attributes based on the modeling used. As with 2014, the standard deviation of the normalized economic earnings was larger than the values for the reported earnings for each year, meaning larger variances around the mean, but they ran less than double while 2014 was more than double. The means were also larger for the economic earnings than reported earnings, comparable to 2014 but less extreme in the increase, shown above in Table 23 and Table 22. The higher  $p$  values and the related failure to reject the null hypothesis indicated more randomness in the difference between each pair of normalized earnings. The randomness indicated the reported earnings reflected natural not forced occurrence. It appeared that managers did not manipulate the reported earnings.

The graphic view of the normalized economic and reported earnings for the years 2013, 2012, and 2011 were not dissimilar to the appearance of the results in 2014. The frequency distributions depicted in the histograms for reported earnings had fewer significant value classes or frequencies around the mean versus the economic earnings where the peaks or higher frequencies appeared substantively shorter or fewer in the number of observations in the frequency distribution. By example, Figure 9 displayed the 2012 results, which looked similar to the 2014 charts in Figure 7 and resembled the comparable charts for 2011 and 2013, absent to avoid redundant charts that cluttered the discussion without adding value. The scatter graph in Figure 10 showed the stream of results by firm with a wide scale to capture the many extreme or outlying results. Based on the variation of the two standard deviations, the reported earnings focused on a



narrower band around the mean than the width of the band covered by the economic earnings, confirming the difference in the frequency distributions and their histograms already discussed. The three years showed similar results, making only one example year, 2012, useful and quite adequate for discussion and for display.

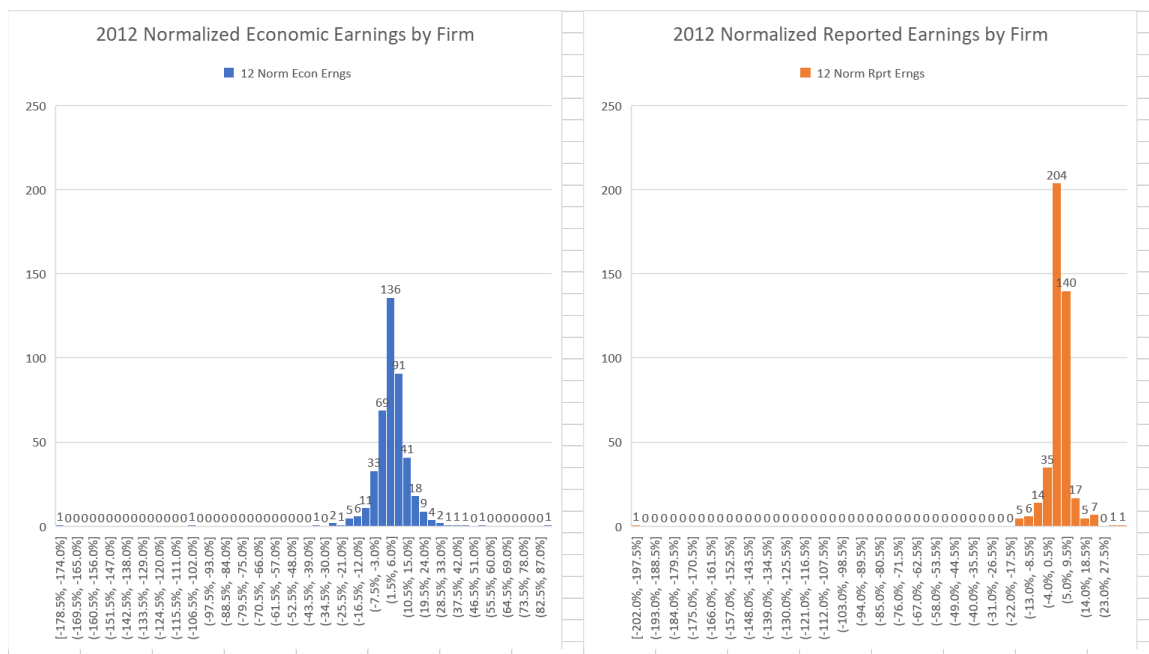


Figure 9. Histograms of normalized 2012 reported and economic earnings.

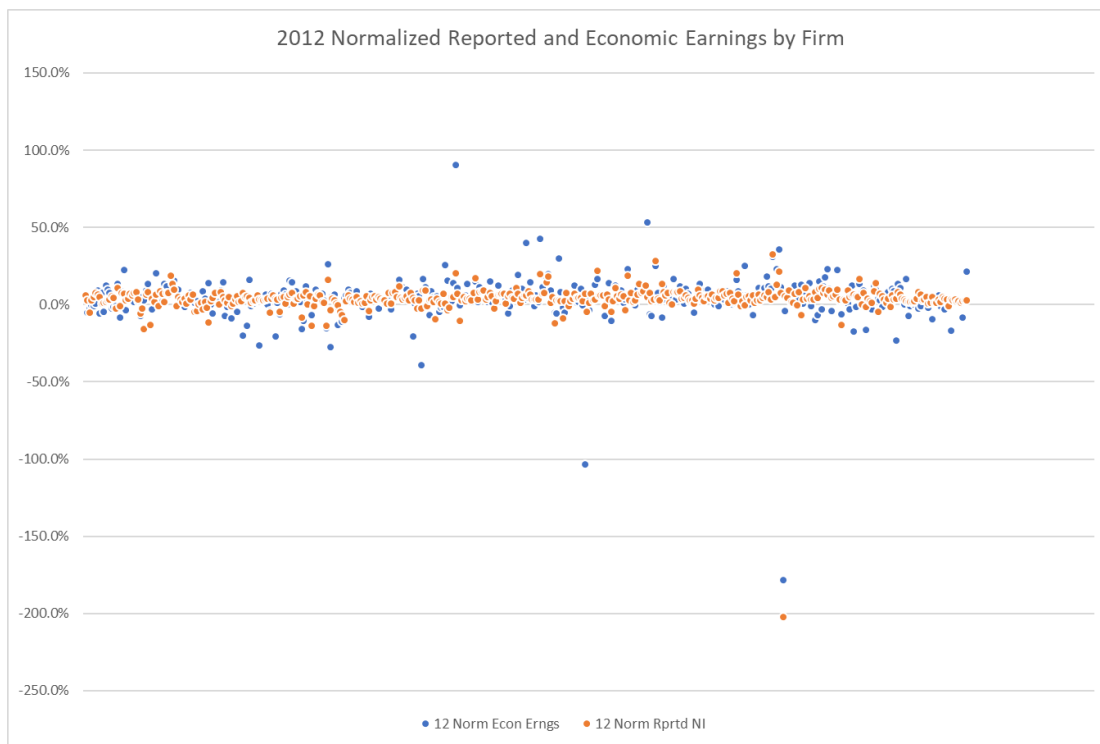


Figure 10. Scatter graph of normalized 2012 reported and economic earnings.

**Summary for Q1.** The figurative picture from the data analysis showed a mixed result. For all the firm years combined and the 2014 period, the  $p$  values supported rejecting the null hypothesis,  $H_0$ , indicating the paired  $t$  test was positive or  $p \leq .10$ . The test confirmed non-random differences and indicated earnings management attributes likely since the differences were systematic rather than random. Conversely, the firm years in the three earlier years, including 2013, 2012, and 2011, tested negative, where  $p > .10$ , showing randomness with the  $p$  values failing a rejection of the null hypothesis. Earnings management appeared absent in the three earlier years, a logical and potential difference driving the use of the longitudinal study planned to track the European earnings management.

## **Q2 Analysis for Industry and Nation Segments**

The data for the Q2 involved the stratification of pools of selected firms for the four-year study period. The first segmentation stratified the firms by domiciling nations for the eleven nations targeted for study, listed in Table 14. The second segmentation identified nine industry groups based on the Global Industry Classification Standard (GICS) at the sector level (Brown et al., 2014), listed in Table 15. A total of 17 groups or segments included each firm twice for the analyses related to Q2 with the study focus split across 2 segmentations, industries and nations, like Behn et al. (2013).

**Q2 analyses for industry groups.** The 432 selected firms represented nine sectors in the GICS code structure (at the sector or two-digit level) and labeled industry groups in the study (Brown et al., 2014). Table 24 displayed the number of firms for each industry sector as well as the  $p$  values for each year and the four years combined. Reviewing the  $p$  values of the combined years by industry segment, 1 of 9 segments reflected a  $p$  value less than or equal to .10 or  $p \leq .10$ . Materials, GICS 15, showed .0170, a value that rejected the null hypothesis and supported the view that the financial reporting of firms in the Materials sector reflected attributes of earnings management. Of the 36 observations based on 4 years of normalized earnings for the 9 industry groups, 5 industry sector years showed a  $p$  value less than or equal to 5%, or  $p \leq .05$ , supporting the rejection of the null hypothesis and indicating the existence of earnings management attributes in the firms of those 5 segments. With the  $p$  value where  $p \leq .05$ , the 5 groups of firm year observations collectively reflected probabilities greater than 95% for the existence of significance and non-random differences between the reported and economic

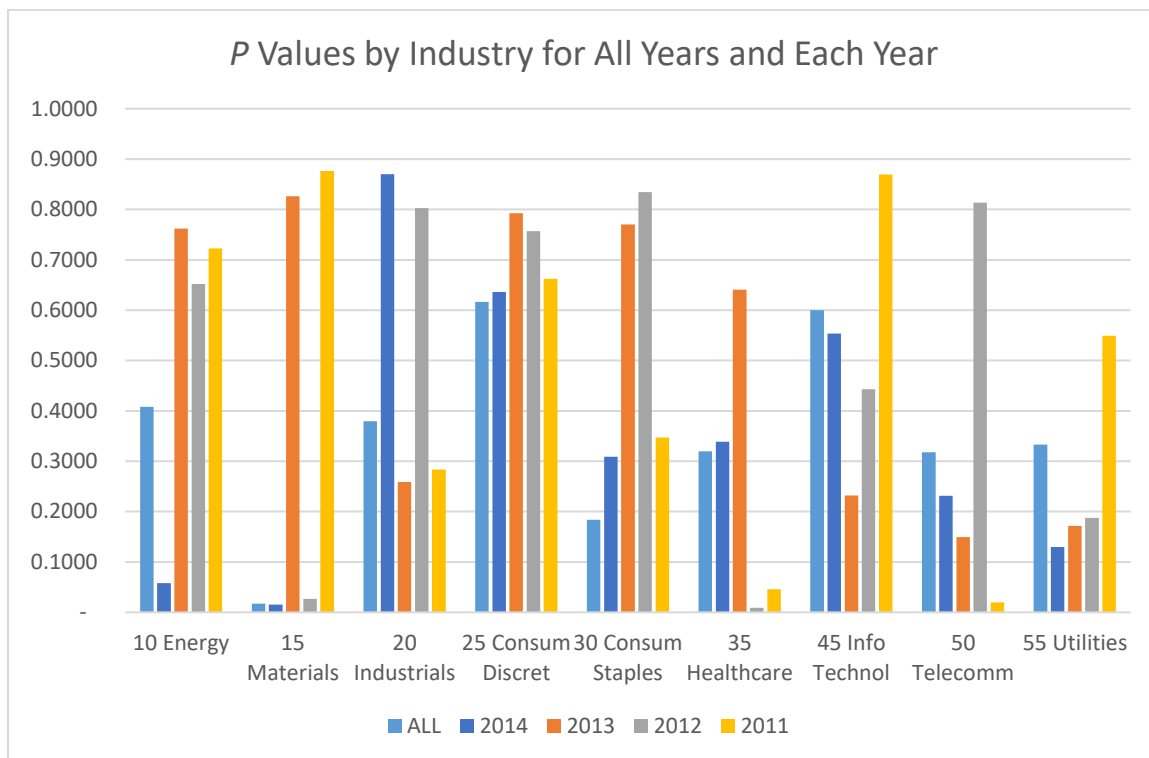
earnings (Dixon et al., 2015), displayed in Table 24 and Figure 11. The  $p$  values signaled the existence of attributes of earnings management among the following groups. The  $p$  value for the differences in normalized earnings for the materials sector, GICS 15, was .0156 in 2014 and .0268 in 2012, which aligned with the 4-year combined  $p$  value of .0170 as discussed earlier. The healthcare sector, GICS 35, showed a  $p$  value of .0229 in 2012 and .0412 in 2011. The telecommunication sector, GICS 50, showed a  $p$  value of .0199 in 2011. The energy sector, GICS 10, reflected a  $p$  value of .0577 in 2014, slightly above the .05 level, but it was significant with its probability greater than 90%. The differences between reported and economic earnings appeared to be non-random, for the evaluation at  $p \leq .10$  supported rejecting the null hypothesis, comparable with the results discussed for the first research question (Wasserstein & Lazar, 2016).

Table 24.

*P Values by Industry of Differences Between Reported and Economic Earnings*

GICS code	Firms	Industries	All	2014	2013	2012	2011
10	21	Energy	.4078	.0577	.7620	.6522	.7226
15	48	Materials	.0170	.0156	.8261	.0268	.8766
20	136	Industrials	.3796	.8700	.2588	.8023	.2836
25	80	Consumer discretionary	.6162	.6360	.7923	.7566	.6623
30	36	Consumer staples	.1838	.3091	.7704	.8343	.3469
35	36	Healthcare	.3198	.3387	.6404	.0091	.0459
45	27	Information technology	.6001	.5537	.2322	.4432	.8692
50	15	Telecommunication	.3178	.2312	.1496	.8133	.0199
55	33	Utilities	.3333	.1295	.1716	.1878	.5491
	432	Total	.0279	.0573	.9675	.3234	.2150

*Note.* The column label “All” refers to the combined or aggregated four years of segment years.



*Figure 11.* Bar chart of segment  $p$  values by industry for all years and each year, 2014, 2013, 2012, and 2011.

The  $p$  values for the seven observations among the industry segment years and combined 4-year period supported a rejection of the null hypothesis. The rejection indicated the differences between the normalized reported and economic earnings were significant and non-random (Dixon et al., 2015). The rejection of the null supported the view that the attributes of earnings management occurred in the reported earnings of the segments' firms. The close alignment with the lowest seven  $p$  values versus the gap with the  $p$  values of the other 38 observations confirmed the existence of earnings management attributes among the firms in the 6 industry years. One industry, materials, reflected the significance in two years plus the combined  $t$  test. A second industry group,

healthcare, GICS 35, reflected significant observations in two segment years. No industry segments showed significant differences in 2013 versus two per year for 2014, 2012, and 2011. The chart in Figure 11 highlighted the  $p$  values for the 45 observations, 36 segment years plus 9 aggregated for 4 years.

**Q2 industry segment findings.** A review of the 30  $p$  values greater than .10, or  $p > .10$ , that failed to reject the null hypothesis, like the energy sector group, GICS 10, showed another small cluster of values. The marginal  $p$  values fell in the range of 80% to 90% probability for randomness but failed to meet the minimum 90% level, or  $p \leq .10$ . The 4 marginal  $p$  values included 3 for the Utilities sector, GICS 55, including .1295 in 2014, .1716 in 2013, and .1878 in 2012 plus .1496 for the Telecommunications sector, GICS 50, in 2013.

Five industries or 20 industry years plus the 5 observed  $p$  values for the combined years failed to reject the null hypothesis, where  $p > .10$ , indicating their financial reports reflected no earnings management attributes. The industry sectors called industrials, consumer discretionary, consumer staples, information technology, and utilities failed to reject the null hypothesis, shown in Table 24 and Figure 11. In 2011 and 2014, telecommunications and energy, respectively, were two industries that showed only one case year each where they rejected the null hypothesis and identified the attributes of earnings management. The nine industry segments in 2013 universally failed to reject the null hypothesis individually (and collectively for  $Q1$ ), indicating the financial results of the 432 firms did not reflect earnings management attributes in 2013. Overall, 30 of 36 industry years or 83% and 8 of the 4-year combined cases or almost 89% failed to reject

the null hypothesis, a large proportion of the observations, indicating the absence of earnings management attributes in the firms in those industry segments. Even with the reduced  $p$  value, where  $p \leq .10$ , the set point range for failing to reject the null hypothesis below 90% probability, the majority of the industry segment observations reflected values resulting in failures to reject the null hypothesis.

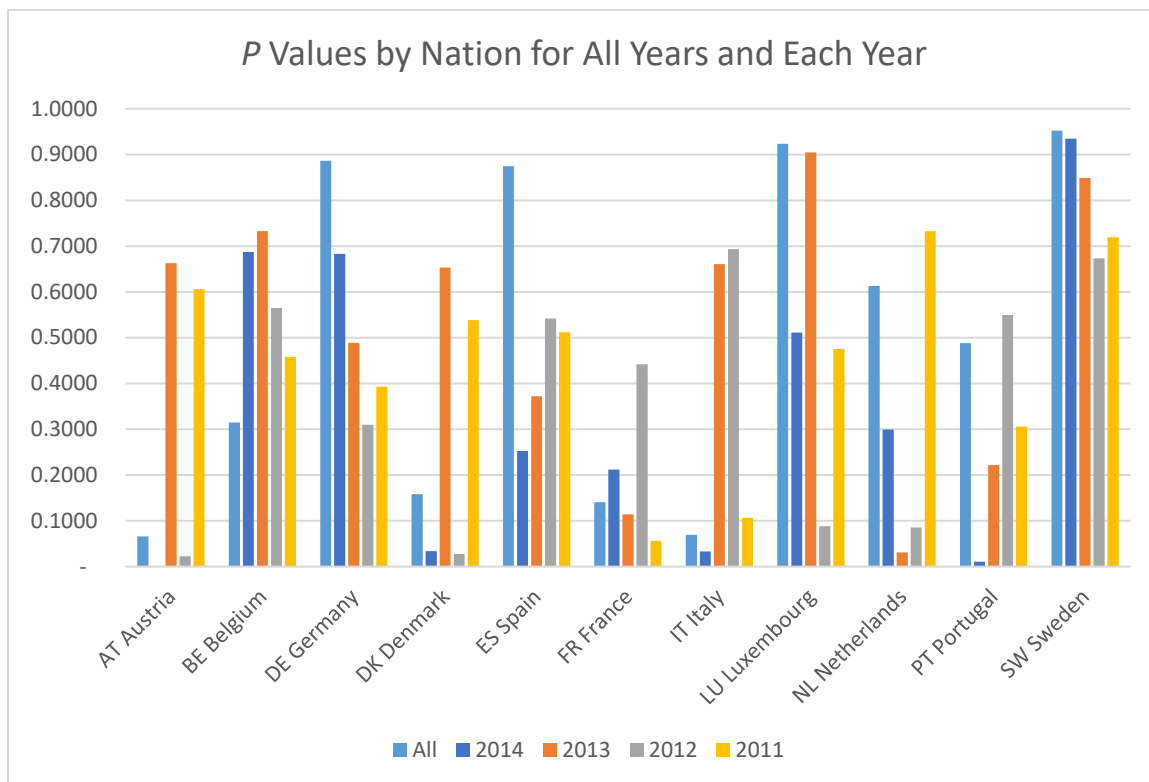
The cases that failed to reject the null hypothesis identified that firms in the 7 observation cases among the 3 industry segments reflected the earnings management attributes. Conversely, the  $p$  values of the other 30 observations fell above .10, or  $p > .10$ , making the probability of significant and non-random differences below 90%, as  $90\% = 1 - .10$ . The results suggested that the firms in this other 30 sector year groups plus 6 sectors absent year or combined  $p$  values at or below .10 did not reflect earnings management attributes in their reported earnings. The more extreme (low probability)  $p$  value results reached .8766 and .8261, in 2011 and 2013, respectively, for the materials sector, GICS code 15. The information technology sector, GICS 45, showed .8692 in 2011. The consumer staples, GICS 30, showed .8838 in 2013. The industrials sector, GICS 20, showed the  $p$  value at .8700. The  $p$  values for all 30 sector (industry) segments, which ranged from .1295 to .8766, showed  $p$  values that failed to reject the null hypothesis,  $H_20$ ; the  $p$  values reflected values too high,  $p > .10$ , to support rejecting the null hypothesis. In 30 of the 36 observed segment years, and 8 of 9 combined year segment  $p$  values, labeled "All" in table 24, earnings management attributes did not appear or occur, based on the lack of significant and non-random differences between the normalized reported and economic earnings rates. The year 2013 had no cases where a



segment rejected the null hypothesis although two marginal rates, where  $.20 > p > .10$ , occurred and had coverage earlier. The other three years showed 2 of 9 segments rejected the null hypothesis where the  $p \leq .10$ , indicating the existence of earnings management attributes.

**Q2 analysis of nations as segments.** The selection of 432 firms represented 11 nations under the code law regimen, listed in Table 14. Of the 55 observations based on four years of earnings results across the 11 nation groups plus the 11  $p$  values for 4 years combined, 7 nation year observations showed a  $p$  value below  $.05$  or  $p < .05$ , and 3 more showed  $p$  values where  $p \leq .10$ , based on the paired  $t$  test. For the combined 4-year  $p$  values, 2 nations, Austria and Italy, each showed a combined  $p$  value below  $.10$ , or  $p \leq .10$ , plus each showed 2 yearly  $p$  values below  $.10$  or  $p \leq .10$ . The  $p$  values of 10 nation year observations plus the 2 combined year cases rejected the null hypothesis, graphed in Figure 12 and displayed in Table 25. The normalized earnings of Austria in 2014 reached the extreme  $.00003$  (or over 99.95% probability), adding the fifth decimal place to show a non-zero value for the firms in Austria for that year. Similarly, Portugal showed a  $p$  value of  $.0048$  with a probability over 99.5%. Austria had a  $p$  value of  $.0224$  in 2012, with a probability above 97%, as did Denmark with the  $p$  value at  $.0274$  in 2012 and a  $p$  value of  $.0340$  in 2014. The Netherlands had a  $p$  value of  $.0313$  in 2013 and Italy showed a  $p$  value of  $.0302$  in 2014, the latter three observations with probabilities above 96% for significant and non-random differences. The  $p$  values supported rejecting the null hypothesis for  $p < .05$ , indicating the firms in those nations for those years reflected statistically significant differences between the normalized reported and economic

earnings (Dixon et al., 2015). France reflected a  $p$  value of .0547 in 2011, the Netherlands was .0854 in 2012, and the observed  $p$  value for Luxembourg was .0885 in 2012. The latter three observed  $p$  values supported rejecting the null hypothesis where  $p \leq .10$ . The next three lowest observed  $p$  values, marginal rates with probabilities between 80% and 90%, ran from .1064 to .1140, failing to reject the null hypothesis with the  $p$  values where  $p > .10$ . A total of 34 of 44 nation years and 9 of 11 nations reflected  $p$  values that failed to reject the null hypothesis where  $p > .10$ . Conversely, the close alignment with the 10  $p$  values that supported rejecting the null hypothesis, where  $p \leq .10$ , indicated that 10 of 44 nation years plus 2 nations showed significant differences between the normalized reported and economic earnings. The  $p$  values of the 2 nations where  $p \leq .10$  each showed 2 yearly  $p$  values below .10 as well, which indicated the firms in those nations reflected the earnings management attributes in the published financial reports.



*Figure 12.* Bar chart of segment  $p$  values by nation for all years and each year, 2014, 2013, 2012, and 2011.

Table 25.

*P Values by Nation: T Tests of Differences Between Reported and Economic Earnings*

Code	Firms	Nations	All	2014	2013	2012	2011
AT	18	Austria	.0658	.00003	.6631	.0224	.6063
BE	20	Belgium	.3144	.6870	.7325	.5647	.4578
DE	96	Germany	.8863	.6024	.4653	.3958	.3785
DK	21	Denmark	.1583	.0340	.6529	.0274	.5386
ES	36	Spain	.8747	.2528	.3719	.5417	.5120
FR	114	France	.1407	.1954	.1226	.4372	.0547
IT	40	Italy	.0693	.0302	.6867	.7229	.1111
LU	10	Luxembourg	.9234	.5109	.9046	.0885	.4757
NL	30	Netherlands	.6130	.2991	.0313	.0854	.7325
PT	11	Portugal	.4881	.0048	.1740	.5703	.2442
SW	36	Sweden	.9518	.9347	.8485	.6729	.7191
	432	Total	.0279	.0573	.9675	.3234	.2150

The  $p$  value .0279 of the combined results of the 1,728 firm years supported rejecting the null hypothesis. In contrast, only 10 nation year  $p$  values of 44 observations rejected the null hypothesis and indicated earnings management attributes occurred. The years 2011 and 2013 reflected 1 observation each (year) that rejected the null hypothesis, but each year also showed a marginal  $p$  value where  $.12 > p > .10$ . Two nations in the years 2012 and 2014 showed 4 cases each (year) where  $p$  values supported rejecting the

null hypothesis, where  $p \leq .10$ . The bar chart in Figure 12 reflected the  $p$  values by year for the 11 nations as well as the 4-year combined  $p$  values, graphically flagging the 12  $p$  values, where  $p \leq .10$ , that supported rejecting the null hypothesis,  $H_2_0$ .

Four nations reflected no years or combined scores where a low  $p$  value supported rejecting the null hypothesis,  $H_2_0$ . The tests showed negative  $p$  values, where  $p > .10$ , in nation years and the combined or aggregate 4-year  $t$  tests. The normalized earnings values of firms in Belgium, Germany, Spain, and Sweden failed to generate  $p$  values that rejected the null hypothesis, which indicated the earnings did not reflect earnings management attributes across all four years. The results showed that the  $t$  tests failed to detect earnings management attributes in these 4 nations for the 4 studied years. Of the remaining 7 nations, 3 nations—Austria, Denmark, and The Netherlands—showed 2 years where the  $p$  value failed to reject the null hypothesis. The remaining 4 nations—France, Italy, Luxembourg, and Portugal—showed 1 year where  $p \leq .10$  and rejected the null hypothesis. No nation showed  $p$  values, where  $p \leq .10$ , that rejected the null hypothesis for more than two studied years. Among the other 34 observed nation segment years, earnings management attributes seemed absent or undetected, based on the existence of insignificant differences between the normalized reported and economic earnings and based on  $p$  values where  $p > .10$  for the firms in those nation year segments.

**Findings for Q2.** The 80 segment years, where  $80 = 44$  nation segment years + 36 industry segment years, plus the 17 combined 4-year  $p$  values analyzed for Q2, exposed 20 cases that rejected the null hypothesis and indicated earnings management. The 4 year combined or aggregate rejections of the null hypothesis overlapped nation

year and industry year segments that identified earnings management attributes in the financial reporting of the related firms (collectively). The years 2011 and 2013 showed one rejection (each) of the null hypothesis for the nation and industry segments. Each group of segments showed two rejections each of the null hypothesis. The firms in industry segments in 2013 failed to reject the null hypothesis in any segment, and one nation year segment rejected the null hypothesis in 2013, suggesting its firm years reflected the least earnings management attributes. The results of the  $t$  tests indicated that 16 of 80 firm years or 20% and 4 combined year scores of 17, or 24% of the segments, included firms that showed the earnings management attributes. The combined year scores tended to confirm the existence of earnings management attributes in one or more years, but some segments (nations and industries) had one or two segment years where the  $p$  value rejected the null hypothesis, but the combined score failed to reject the null and flag the condition of earnings management. Conversely, no segment combined score indicated the existence of earnings management where no annual value rejected the null hypothesis, where  $p \leq .10$ .

**Summary for Q1 and Q2 combined.** The data analysis for the first two research questions, Q1 and Q2, revealed the existence and occurrence of earnings management attributes for selected years and segments. The aggregated four years and the year 2014 alone rejected the null hypotheses; the paired  $t$  test results supported the view that the non-random and statistically significant differences between the normalized reported and economic earnings affirmed the financial reports reflected manipulated earnings. The  $p$  values in the other three years, 2011, 2012, and 2013, when evaluated individually, failed

to reject the null hypothesis and did not support the view that the 432 firm years in those fiscal reporting years reflected earnings management attributes. The paired  $t$  test for the year 2013 showed a  $p$  value of .9675 and a probability of earnings manipulation below 4%  $> 1 - .9675$ . As a sensitivity test, I ran a  $t$  test for the three years excluding 2013 using the 1296 (= 3 x 432) firm years. The  $p$  value of .0149 resulted, demonstrating that the years 2014, 2012, and 2011 collectively reflected earnings management attributes. The year 2013 alone, by this sensitivity test, demonstrated a lack of earnings management attributes in the financial reporting. The analyses for Q2 stratified the data into 20 distinct segments, 11 for nations and 9 for industry segments.

The analyses by segment for Q2 identified selected nation segments and industry segments reflecting earnings management attributes. The goal of the question was to search for and isolate cases where the nations and industry sectors might manage or manipulate the reported earnings. The  $p$  values in two industry sector years in each of three years, 2014, 2012, and 2011, rejected the null hypothesis and supported the view that earnings management attributes occurred. The materials and health care sectors each showed two segment years while the energy and telecommunications segments reflected such attributes in one segment year. The  $p$  values for all nine industry segments in 2013 rejected the null hypothesis, affirming the  $t$  test results in Q1. The aggregate  $t$  tests for each industry segment identified one industry segment, materials, exhibiting earnings management attributes, where  $p \leq .10$ , and materials tested positively, where  $p \leq .10$ , for the attributes in two segment years.

The second analysis sets for *Q2* evaluated the 11 nation segments, code law jurisdictions in Northern and Western Europe. The paired *t* tests demonstrated that 3 nation segments, Austria, Denmark, and the Netherlands, tested positive for earnings management attributes in 2 of the 4 years and 4 nations reflected 1 year with the attributes, shown in Table 25. The Netherlands showed a *p* value of .0313 in 2013, the single positive test in *Q1* and *Q2* for earnings management attributes in that year. The aggregate *t* tests for each nation segment identified two nations segments, Austria and Italy, exhibiting earnings management attributes, where  $p \leq .10$ . Italy showed the attributes in one segment year and Austria, as mentioned earlier, showed the attributes in two segment years.

A minority of the firm years by segment reflected earnings management attributes. For the industry segments, 6 of 36 segment years or almost 17% reflected the earnings management attributes. A larger minority reflected earnings management among the nation segment years where 10 of 44 segments years or almost 23% rejected the null hypothesis, affirming the occurrence of earnings management attributes among the 10 segment years. A majority of nation segments, 7 of 11 or almost 64%, reflected earnings management attributes in at least one segment year while a minority, 4 of 9 or 44%, of industry segments had at least one segment year that reflected earnings management attributes. The majority of firms, as indicated by the majority of firm years and segment years as well as the aggregate measures of industry segments, evaluated in *Q1* and *Q2* did not exhibit the earnings management attributes. The nations seemed to reflect another



status using their aggregate tests across all four years; almost 64 % of the nations reflected earnings management attributes.

### **Q3 Analysis of Restatements**

I evaluated the differences between the restated amount and the economic earnings using Q3. The restatement amount was the reported earnings that reflected a change or restatement after the management of a given firm published its financial reports for that fiscal year. The managers published a restatement after publication of the original reported earnings (Loyeung et al., 2016). For most cases, the discovery of the restatement amount required the comparison of the initial report of earnings to subsequent years when that year became a prior year in the comparative income statement. I recorded the amount of restatement where I discovered the change in the prior year compared to the original reported income on the income statement, following the model from Loyeung et al. In a few cases, discussed below, the regulators publicized the restatements or managers disclosed the restatements in the notes to the financial statements. The independent variable for the restatement amount was  $P_{fy}$ , where  $f$  was the firm and  $y$  was the fiscal year, shown in Table 26. I normalized the restatement amount, called  $PN_{fy}$  when I divided it by another independent variable, the total assets for the same fiscal year,  $T_{fy}$ , shown in Table 26. The process paralleled the process of normalizing the reported and economic earnings for comparability among firms and segments in the evaluation of the prior research questions. The evaluation involved the comparison of the restatement amount, or restated earnings, and the economic earnings

by using the paired  $t$  test. The pairs were the restatement and economic earnings for the firm year cases that I discovered.

Table 26.

*The Variables for Restatement Evaluations in Q3*

Name	Variable type	Breakdown or disaggregation of elements
$P_{fy}$	Independent	Restatement amount for reported earnings
$PN_{fy}$	Dependent	Normalized restatement amount for $t$ test
$EN_{fy}$	Dependent	Normalized economic earnings for $t$ test
$T_{fy}$	Independent	Total assets to normalize restatement amount
$f$	Subscript	Firm or business entity
$y$	Subscript	Fiscal year or reporting year

**Publicized restatements for Q3.** Of the 124 firms restating reported earnings, two appeared as regulatory requirements, called Type 1, and four other firms disclosed a restatement in the financial statement notes, labeled Type 2. Table 9 in Chapter 3 listed the restatement type codes where I also introduced the concept and discussed them. The six firms, listed in Table 27 and domiciled in Germany, were subjects to the German program of publication under their regulatory review (Hitz et al., 2012; Strohmenger, 2014). The firms represented between 1% and 2% of the firms and less than 1% of the firm years; firms in four industry sectors of the nine studied appeared among the 13 firm years. The German regulators targeted selected industry segments and conditions each year to statistically evaluate the reported earnings quality and other financial statement

attributes. The reviews were not pervasive; the regulatory oversight board selected new cases annually and publicized them as action targets in advance, at the beginning of each calendar year in their *Goals* (Federal Financial Supervisory Authority, 2017). Of the six firms listed in Table 27, the two healthcare firms reported restatements in 2014 and the two industrial sector firms restated reported earnings in 2012, with one restating year after year or all four years. The electric utility restated the reported earnings for four years and a consumer discretionary firm restated the earnings in 2012 and 2013. The data appeared in Table 27. The German regulatory approach for redress appeared as the only comparable effort by any of the nations studied. The scarcity of publicized information on earnings restatements highlighted the absence of such programs in the other 10 national jurisdictions.

Table 27.

*Firms and Firm Years by Restatement Types 1 and 2 in Germany*

Firm	Nation	Industry	GICS	Code	Firm years
Adidas	Germany	Consumer	25	1	2012
		discretionary			2013
Enbw	Germany	Electricity	55	1	4 years
Energie					
Baden-W					
AG					
Vossloh AG	Germany	Industrials	20	2	2012
Strabag AG	Germany	Industrials	20	2	4 years
Celesio AG	Germany	Healthcare	35	2	2014
Sartorius	Germany	Healthcare	35	2	2014
AG					
Six firms	One nation	Four	Four GICS	Two types	13 firm
		industries			years

**Analysis of all restatements for Q3.** I evaluated the significance of the differences between the restated and economic earnings for the four years combined. I found the  $p$  value of .0279 fell below .10,  $p \leq .10$ , rejecting the null hypothesis. The differences were significant, and the probability was less than 10% that the differences were random. Where the  $t$  test indicated rejecting the null hypothesis, shown in Table 28,

the  $p$  value supported the view that managers fulfilled their roles under the Agency and Stewardship theories with respect to reporting earnings for investors (Al Farooque, 2016). The restated earnings amount differed from or did not match the economic earnings for the 240 firm years collectively over the 4-year period. The restatements reported for the years 2014 and 2012 similarly reflected non-random, significant differences between the restated and economic earnings. The restatements indicated an update of the initial reported earnings not necessarily addressing earnings management attributes since the change did not align with the economic earnings. In contrast, the restated earnings in the years 2013 and 2011 appeared random and non-significant, based on the  $p$  values, shown in Table 28, failing to reject the null hypothesis for the firms in all nations and industries, collectively. Where the  $t$  test resulted in a  $p$  value greater than 10%,  $p > .10$ , the test indicated a failure to reject the null hypothesis, which implied that the managers corrected the accounts for the reported earnings for redressing the earnings management attributes. Of the 240 firm years, 135 firm years or 56% appeared in the years 2014 and 2012 combined, for which the annual  $p$  values paralleled the overall rate,  $p \leq .10$ ; the  $t$  test results supported rejecting the null hypothesis. The years 2013 and 2011 included 105 firm years or 44% of the 240 firm years; the differences between restated and economic earnings during these two years generated  $p$  values that failed to reject the null hypothesis and supported the view the managers redressed earnings management included in the initial published values.

Table 28.

*Results of the Q3 Paired T Test Showing P Values for the Q3 Hypothesis Tests*

Selection	4 Years	2014	2013	2012	2011
Firms for 1 year		.0033	.9143	.0643	.7314
240 Firm years	.0279				
Null hypothesis $H_{30}$	Rejected	Rejected	Failed to	Rejected	Failed to
$p \leq .10$			reject		reject
Restated firm years	240	58	58	77	47
Total firm years	1,728	432	432	432	432
% Restated	14%	13%	13%	18%	11%
firm years					

**Industry segment data analysis and insights for Q3.** The 9 industry segments reflected varied levels of restated earnings when considered as a proportion of the combined 432 firms and 1728 firm years. Of the 1728 total firm years, 240 or 14% showed restatements, shown in Table 28, with different industry segments ranging from a minimum of 10% in consumer discretionary, GICS 25, to 24% in utilities, GICS 55. The descriptive statistics appeared in Table 29 and the proportions for the industry firm years showed in Table 30. The simple average of the proportions was 14% and the median was 15%, suggesting a minimal skewing in the distribution, and the standard deviation was 5%. The minimum was at the lower limit of 1 standard deviation while the maximum was effectively at the level of 2 standard deviations for the firm years. By contrast, the firms

reflecting restated earnings were 124 or 29% of the 432 firms in the study, shown in Table 30 and Table 29, respectively. The proportion of firms ranged from a maximum of 36% for utilities, GICS 55, to a minimum proportion of 22% for information technology, GICS 45, as shown in Table 30. In addition, the consumer staples industry, GICS 30, was near the maximum at 36% of firms in that industry and the telecommunications industry ran a close third highest at 33% of firms reflecting restated earnings. Similarly, consumer discretionary, GICS 25, reflected the second lowest proportion of firms reporting restatements at 24%. All proportion rates by industry appeared in Table 30. The proportion of firms restating their reported income was substantive; it was not inconsequential to find 14% of firm years and 29% of firms publishing restated earnings in subsequent years, shown in Table 29.

Table 29.

*Descriptive Statistics for Proportions of the Restated Firms and Firm Years by Industry*

Measure	Statistics of firms	Statistics of firm years
Maximum	36%	24%
Minimum	22%	10%
Median	29%	15%
Standard deviation	5%	5%
Mean plus standard deviation	34%	19%
Mean	29%	14%
Mean less standard deviation	24%	10%
Proportion of selection	29%	14%



Table 30.

*Proportion of Firms and Firm Years by Industry for Firms and Years With Restatements*

GICS code	Industry sectors	Restated firms	All firms	Per cent	Restated firm years	Firm years	Per cent
10	Energy	6	21	29%	14	84	17%
15	Materials	13	48	27%	22	192	12%
20	Industrials	40	136	29%	79	544	15%
25	Consumer discretionary	19	80	24%	31	320	10%
30	Consumer staples	13	36	36%	24	144	17%
35	Healthcare	10	36	28%	15	144	10%
45	Information technology	6	27	22%	17	108	16%
50	Telecommunication	5	15	33%	6	60	10%
55	Utilities	12	33	36%	32	132	24%
	Total	124	432	29%	240	1,728	14%

**Q3 *t* test industry analysis.** The industry data by year reflected a more granular view with 36 observations than the analysis of the four years combined with nine observations. 28 of the 36 industry year sample sizes proved acceptable for analysis. Of the 36 industry years, 3 industry year observations showed 0 or 1 observation or event, or  $n = 0$  or  $n = 1$ , respectively, as shown in Table 31. The “NP” in Table 32 meant the calculation was “not possible” (NP) where  $n < 2$  observations. Of the 36 industry years, 5 more events reflected 2 or 3 firm year observations,  $n = 2$  or  $n = 3$ . Where the observations fell below 4,  $n < 4$ , I excluded the  $p$  value even where it would calculate for the low number of cases,  $n$ , and identified the industry year as “NA” for “not accepted” due to the small sample size. Of the usable 28 industry year observations, the  $p$  value of 3 cases supported rejecting the null hypothesis for  $p \leq .10$ , listed in Table 32. The materials industry, GICS 15, 2012 showed  $p = .0280$  and the consumer discretionary industry, GICS 25, showed  $p = .0348$ , also in 2012. The third industry year, healthcare, GICS 35, was a marginal rejection of the null hypothesis, where  $p = .1015$ , which rounded to .10. The crucial issue was 3 of 28 observations rejected the null hypothesis at the industry year level. The 12% or 3 of 28 measurable industry years that rejected the null hypothesis supported the view that 3 cases showed significance and non-randomness of differences between the economic and restated earnings; the restatements did not match the economic earnings and did not offset or cancel the misstatement.

Table 31.

*Count, n, of Firms and Firm Years by Industry With Restatements*

GICS	Firms	Industry	Firm years	2014	2013	2012	2011
10	6	Energy	14	4	3	4	3
15	13	Materials	22	5	5	8	4
20	40	Industrials	79	19	16	27	17
25	19	Consumer discretionary	31	6	10	9	6
30	13	Consumer staples	24	4	9	8	3
35	10	Healthcare	15	5	2	6	2
45	6	Information technology	17	4	4	5	4
50	5	Telecommunication	6	4	1	1	0
55	12	Utilities	32	7	8	9	8
	124	Total	240	58	58	77	47

Table 32.

*P Values by Industry: T Tests of Differences Between Restated and Economic Earnings*

GICS code	Firm years	Industry	All years	2014	2013	2012	2011
10	14	Energy	.0061	.1310	NA	.2534	NA
15	22	Materials	.4097	.8085	.5712	.0280	.3207
20	79	Industrials	.2607	.1761	.7406	.9528	.4240
25	31	Consumer discretionary	.1007	.1672	.6998	.0348	.9911
30	24	Consumer staples	.7487	.2611	.4922	.5424	NA
35	15	Healthcare	.0651	.1015	NA	.5463	NA
45	17	Information technology	.2627	.2576	.6692	.7085	.8325
50	6	Telecommunication	.7442	.7374	NP	NP	NP
55	32	Utilities	.0239	.1249	.8326	.2440	.2819
	240	Total	.0065	.0033	.9143	.0643	.7314

*Note.* NA meant the calculation was “not accepted” (NA) where  $n < 4$  observations.

NP meant the calculation was “not possible” (NP) where  $n < 2$  observation.

The above segment results should be used or viewed cautiously as the samples “n” by segment firm-year and in aggregate for all years were small in most cases, as shown in Table 31.

The 25 restatement cases or almost 92% of the 28 testable cases “matched” the economic earnings, based on the  $p$  values exceeding the .10, or  $p > .10$ . The failure to reject the null hypothesis made the 25 industry years a possible or even probable reversal or cancellation of the reported earnings misstatement as the paired values for these cases did not significantly differ. The 5 excluded cases of 2 or 3 firm years per industry year, shown in Table 31, failed to reject the null hypothesis. The 5 exclusions might augment the 25 cases, where  $25 = 28 - 3$ , that failed to reject the null. The 5 exclusions, however invalid, all showed a  $p$  value that exceeded the target of 10%, or  $p > .10$ , meaning a probability of 90%, based on  $90\% = 1 - 10\%$ . The general indication, even without the excluded case statistics, was the majority of industry segment years, 25 of 38 or almost 66%, indicated the majority of restatements matched the economic earnings. The results of the paired  $t$  tests, finding the majority of the differences insignificant and random, seemed to indicate that the restatements reversed the discretionary accruals in reported earnings and seemed to offset the earnings management attributes.

**Nation segment data analysis and insights for Q3.** The 11 nation segments reflected varied levels of restated earnings when considered as a proportion of the combined 432 firms and 1,728 firm years. Of the 1,728 total firm years, 240 or 14% showed restatements, with different nations ranging from a minimum of 9% in Portugal, to 50% in The Netherlands. The descriptive statistics appeared in Table 33 and the proportions for the nation firm years showed in Table 34. The simple average of the proportions was 27% and the median was 28%, suggesting a right-side skewing in the distribution, and the standard deviation was 13%. The minimum was about 1.30 standard

deviations below the mean while the maximum was effectively at the level of 2 standard deviations for the firm years. By contrast, the firms reflecting restated earnings were 124 or 29% of the 432 firms in the study, shown in Table 34 and Table 33, respectively. The proportion of firms ranged from a maximum of 29% for The Netherlands, to a minimum proportion of 2% for Portugal, as shown in Table 34. In addition, France was far below the maximum at 19% of firms. Austria, Spain, and Belgium fell close to France and above the mean at 17%, 16%, and 15%, respectively, reflecting firms with restated earnings. Similarly, Luxembourg and Italy reflected single digit proportions of firms with restated earnings, showing 3% and 3%, respectively, of firms with restatements. All proportion rates by nation appeared in Table 34. The proportion of firms restating their reported income was substantive; it was not inconsequential to find 14% of firm years and 29% of firms publishing restated earnings in subsequent years.

Table 33.

*Descriptive Statistics for Proportions of the Restated Firms and Firm Years by Nation*

Measure	Proportions of firms	Proportion of firm years
Maximum	50%	29%
Minimum	9%	2%
Mean	27%	12%
Median	28%	11%
Standard deviation	13%	8%
Mean plus standard deviation	39%	20%
Mean	27%	12%
Mean less standard deviation	14%	4%

Table 34.

*Proportion of Firms and Firm Years by Nation With Restatements*

Code	Nation	Restated firms	All firms	Per cent	Restated firm years	Firm years	Per cent
AT	Austria	5	18	28%	12	72	17%
BE	Belgium	5	20	25%	12	80	15%
DE	Germany	21	96	22%	40	384	10%
DK	Denmark	7	21	33%	9	84	11%
ES	Spain	14	36	39%	23	144	16%
FR	France	39	114	34%	86	456	19%
IT	Italy	5	40	13%	5	160	3%
LU	Luxembourg	1	10	10%	1	40	3%
NL	Netherlands	15	30	50%	35	120	29%
PT	Portugal	1	11	9%	1	44	2%
SW	Sweden	11	36	31%	16	144	11%
	Total	124	432	29%	240	1728	14%



**Q3 *t* test nation analysis by year.** The nation data by year reflected a more granular view with 44 observations than the analysis of the four years combined with eleven observations. Less than half the nation years or 21 of the 44 nation year sample sizes, where  $n \geq 4$ , proved acceptable for analysis, as shown in Table 35. The excluded 23 nation years included 13 observations that showed 0 or 1 firm year, considered “not possible” and coded “NP,” and 10 more nation years reflected 2 or 3 observations, labeled “not actionable” or “NA,” as highlighted in Table 35. Where the firm year observation counts fell below 4,  $n < 4$ , for a nation year, the  $p$  value was excluded even where it would technically calculate for the cases of 2 to 3 firm years but excluded for validity concerns. In some cases, a nation had no nation years to evaluate using the paired  $t$  test. Of the 11 nations, I labeled 4 or 37% of the nations as “none” in Table 35 under the column heading “Nation Years to Test” to identify those nations with no nation years eligible to evaluate using the paired  $t$  test. Denmark, Italy, Luxembourg, and Portugal presented no cases of a nation year where a  $t$  test was calculable; Portugal and Luxembourg were the most extreme, as each nation reflected one nation year for a discovered restatement, meaning 3 of the 4 studied years had no restatement cases.

Table 35.

*Count, n, of Firms and Firm Years by Nation With Restatements*

Code	Nation	Restated firms	Nation years to test	2014	2013	2012	2011
AT	Austria	5	2	4	4	2	2
BE	Belgium	5	2	2	4	4	2
DE	Germany	21	4	11	8	11	10
DK	Denmark	7	None	3	1	3	2
ES	Spain	14	3	2	7	7	7
FR	France	39	4	19	24	29	14
IT	Italy	5	None	1	1	2	1
LU	Luxembourg	1	None	0	0	1	0
NL	Netherlands	15	4	10	8	11	6
PT	Portugal	1	None	0	0	0	1
SW	Sweden	11	2	6	1	7	2
	Total	124	21	58	58	77	47

*Note.* Nation years, where the count,  $n \leq 4$ , did not support the paired  $t$  test.  
 Nation years, where the count,  $n \leq 10$ , presented  $t$  test results of questionable validity, discussed in Chapter 3 under the subtitle  $T$  Test Bias.

The  $p$  value of 3 nation year cases, a minority of the 21 nation year observations classified as usable and actionable, supported rejecting the null hypothesis for  $p \leq .10$ , listed in Table 36. Austria showed  $p = .0183$  in 2014 and Germany showed  $p = .0683$  in 2012. The third nation year was the Netherlands with  $p = .0319$  in 2013. France reflected a low aggregate  $p$  value,  $p = .0577$ , that supported rejecting the null, even though the 4 nation years of France failed to reject the null, where  $p > .10$ . No nation year appeared marginal, as the next lowest nation year was  $p = .1131$  in Belgium in 2012. A crucial issue was 3 of 21 or 14% of nation year observations rejected the null hypothesis at the nation year level. As stated above, rejecting the null meant the firms of the three nation years likely reflected corrections for issues besides earnings management; the firms redressed other accounting needs. The 18 nation years or almost 86% failed to reject the null hypothesis showing high  $p$  values, identified in Table 36, where  $p > .10$ . The rejections of the null hypothesis indicated insignificant differences between the restated and economic earnings, and the rejections supported the view that restatements redressed prior reported earnings management. In addition, 4 nations with their 16 nation years, Denmark, Italy, Luxembourg, and Portugal, 4 of 11 or 36% of the nations, had too few if any restatements in any year to evaluate the differences; the nation years were classified as “not possible” (NP) or “not actionable” (NA), as discussed earlier. To wit, 18 of 21 measurable nation years or 86% the cases failed to reject the null and attested to the non-significance and randomness of differences between the economic and restated earnings. Conversely, 1 nation of 11 or 9% failed to reject the null hypothesis when combining all nation years; France alone indicated that its restatements were significant and non-

random, and they were not redressing earnings management attributes. The majority of the nations, 8 of 11 or 73%, rejected the null and indicated the restatements did correct and reverse earnings management attributes. One crucial issue left unresolved was why 23 of 44 nations had few restatements? I addressed that and other issues with the conclusions in Chapter 5.

Table 36.

*P Values by Nation: T Tests of Differences Between Restated and Economic Earnings*

Code	Firm years	Nations	All	2014	2013	2012	2011
AT	12	Austria	.2636	.0183	.8462	NA	NA
BE	12	Belgium	.5155	NA	.2878	.1131	NA
DE	40	Germany	.4303	.4511	.9809	.0683	.5350
DK	9	Denmark	.1636	NA	NP	NA	NA
ES	23	Spain	.2284	NA	.4071	.3687	.8055
FR	86	France	.0577	.2164	.3910	.6844	.1530
IT	5	Italy	.3297	NP	NP	NA	NP
LU	1	Luxembourg	NP	NP	NP	NP	NP
NL	35	Netherlands	.3449	.6119	.0319	.9902	.5033
PT	1	Portugal	NP	NP	NP	NP	NP
SW	16	Sweden	.5151	.9168	NP	.2344	NA
	240	Total	.0065	.0033	.9143	.0643	.7314

*Note.* NA meant the calculation was “not accepted” (NA) where  $n < 4$  observations.

NP meant the calculation was “not possible” (NP) where  $n < 2$  observation.

**Q3 summary.** The proportion of firms restating their reported income was substantive even though a minority of the selected firms and firm years. The proportion was not inconsequential; I found 14% of firm years and 29% of firms publishing restated earnings in the years after the initial publication. The proportions included 240 firm years and 124 firms that restated earnings already published for investors' use as decision makers. The majority of the  $t$  tests for the aggregate of all years for both the nation and industry segments that reported restatements generated  $p$  values that failed to reject the null hypothesis, where  $p > .10$ . Among the 11 nations, almost 73% or 8 of 11 failed to reject the null hypothesis. Among the 9 industry segments when measured as an aggregate of the 4 years, the  $p$  values of 8 or almost 89% of segments were over the threshold of  $.10$ ,  $p > .10$ , and the high  $p$  value failed to support rejecting the null hypothesis. Viewed as a proportion of the measurable firm years by segment, 84% of the observed cases showed  $p$  values that failed to reject the null hypothesis. Failing to reject the null hypothesis indicated the likelihood that the restatements reversed or offset the effects of earnings managements attributes in the initial reported earnings. Conversely, rejecting the null hypothesis for  $Q3$  supported the view that managers fulfilled their roles under the Agency and Stewardship theories with respect to reporting earnings reflecting decision useful quality attributes for all the investors in the capital markets (Al Farooque, 2016). The low quality reflected in restatement cases meant the initial reported earnings showed decision usefulness for the insiders with foreknowledge of the information while the skilled analysts likely had the resources to detect the earnings management attributes (Beneish et al., 2013).

### 2013 Anomaly in the Analyses

The analyses of data in 2013 yielded anomalous results which were not completely explored and explained within the scope of my study. While exceeding my scope for detailed exploration, I could rationally speculate on or hypothesize about the circumstances that might explain the anomalies even though I need to conduct another study to address this case. In the Q1 analyses, where I compared the reported and economic earnings, the 2013 aggregate year reflected a  $p$  value of .9675, shown in Table 19. In the Q2 analyses, the segment year  $t$  tests generated 19 negative results out of 20  $t$  tests, rejecting the null hypothesis based on the segment  $p$  values shown in Tables 24 and 25 for industries and nations, respectively. One segment year provided a positive result; a  $p$  value of .0313 occurred for The Netherlands segment, the one positive test indicating the attributes of earnings management occurred. The 20 negative  $p$  values of 21 for Q1 and Q2 combined indicated that the 2013 differences were not statistically significant and were random. Earnings management attributes were not apparent or at least not sufficiently prevalent among most of the 432 firm years to drive a positive test result and to reject the null hypothesis.

I found positive  $t$  test results in my analyses of 2013 data for Q3. The aggregate 2013 paired  $t$  test generated an extreme  $p$  value,  $p = .9143$ . The result was a positive test result, when I compared the individually and independently collected restated earnings with the corresponding or paired economic earnings for the 58 discovered firm year cases. The high  $p$  value supported a failure to reject the null hypothesis. In Q3, this status indicated the restatements failed to differ significantly from the economic earnings and

affirmed earnings management attributes existed or occurred. In the paired  $t$  tests for exploring segments for Q3, 11 of the 12 testable industry and nation segments tested positive; the  $t$  test generated 11  $p$  values where  $p > .10$ . The  $p$  values failed to reject the null hypothesis and affirmed earnings management attributes for the restated earnings among the firms that restated 2013 earnings. The twelfth result was  $p = .0319$ ; the  $p$  value was for The Netherlands segment, the same segment discussed as the outlier in the Q2  $t$  tests. The indication for The Netherlands was opposite the collective results in Q3 and the Q1 and Q2 series without a discovered cause. I could attribute the collective results, the seeming conflicting results, between the Q1 and Q2 series and the Q3  $t$  tests to the severity and proportion or prevalence of the earnings management attributes not detected by the Q1 and Q2  $t$  tests. Strictly speculative, the discussion points for the majority of cases conflicted with the negative findings for the Q3  $t$  tests for The Netherlands in 2013 where the Q2 and Q3  $t$  tests showed opposite results. The Netherlands was an outlier, consistently inconsistent in the  $t$  tests with the Q1 aggregate and Q2 segments in addition to the Q3 restatements. The Netherlands showed a reversal of the majority finding in both cases. The year 2013 collectively and The Netherlands individually provided mysterious and anomalous results that I failed to conclusively resolve within the scope of my current study and work.

#### **Chapter 4 Conclusion and the Transition to Chapter 5**

My analysis of the subject firms identified a consistent trend of earnings management among the subject firms. My application of the  $t$  tests for analyzing the discretionary adjustments revealed the attributes of earnings management in a minority of



the firms. The minority of firms included the firms' earnings from multiple years, industry sectors, and multiple nations, indicating the problem pervasive even though detected in a minority of cases. The paired  $t$  tests supported the view that the discretionary adjustments artificially changed the earnings values reported to the public, effectively the global investment community and capital markets. The differences between reported and economic earnings, differing by abnormal discretionary adjustments, proved to be non-random and statistically significant. The cases reflecting the significant differences revealed low two-digit proportions of the total cases where earnings management attributes existed in industry and nation segments.

Analyzing the data enabled me to evaluate the research questions. My work supported the discovery of earnings management attributes among public firms domiciled in eleven code law nations of Western and Northern Europe. The nations were members of the European Union when they adopted IFRS for public firm financial reporting in 2005. The attributes of earnings management indicated non-conformance among the firms where the management teams seemed to apply inappropriate discretion to manage or manipulate the reported earnings published for the global investment community and other participants, like regulators, in the capital markets. The managers effectively reported low quality earnings when they presented asymmetric information that favored insiders. While the goal of reporting under IFRS and conforming to IFRS was the delivery and publication of consistent and comparable earnings, the managers manipulated the flexibility of the standards designed to meet the needs of firms in diverse industries operating in multiple nations. The managers expediently voided their roles as

agents for the business owners, the many investors, and stewards of the investors' capital. The managers undermined the legitimate application of the reporting standards for their purposes at the cost of compromising the optimization of the firm and the maximization of its progress. In addition, the asymmetric information supported suboptimal investor decision making as they, the outsiders, had only manipulated information for their investment decisions. The firms' managers contrived the discretionary adjustments, purportedly to improve the realism in the reported earnings, but the managers degraded the reporting quality vis-à-vis the decisions regarding discretionary accruals that manipulated the reported earnings.

In Chapter 5, I reviewed the recent literature of the field. I evaluated the analytical results and drew logical and objective (or information based) conclusions appropriate to the study, recognizing the logical boundaries and constraints of my work. I highlighted the opportunities for further research and study that I discovered during this study but determined that they were beyond the scope of this work. I assessed the conclusions in light of the governing foundational Agency and Stewardship theories, establishing how my study fitted the context of the broader body of knowledge in this field.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

I reviewed the purpose for my study as well as the social benefits associated with and resulting from the study in the first section. I summarized my research findings in the second section that I detailed in Chapter 4. In this chapter, I proceed with the interpretations of my findings in the next section, projecting the results on society while looking for rational generalizations in the field of knowledge. I continue beyond the interpretations to relate my findings with the theoretical foundations supporting the study as well as position my findings within the broader field of knowledge with current research in the next section. My interpretations have boundaries, and I discuss the limits of my ability to apply my findings to the theoretical foundations as well as professional applications. I recount options for further research that I identified during my study and new opportunities to explore my data and research goals using an alternative approach. I conclude my reporting and research study at the close of Chapter 5.

### **Purpose and Social Need**

The purpose of this quantitative study was to forensically examine the symptoms and cases of earnings management among listed firms in selected European code law nations. I employed a longitudinal method to find earnings management symptoms and attributes manifested as excessive discretionary accruals using various tests (see Dayanandan et al., 2016). I compared the reported and economic earnings for statistically significant differences (see Govendir & Wells, 2014). I evaluated the statistical significance using Student's *t* test methodology (see Dechow et al., 2012). I identified

restatement cases, and I compared the restated and economic earnings for matched pairs to uncover earnings management attributes (see Loyeung et al., 2016). The design was longitudinal, and I collected and compiled secondary data for 4 years (see Watrin et al., 2014) from the Mergent database (Tarca et al., 2013) and other comparable sources like Morningstar, Bloomberg, and Bureau van Dyk in the public domain. I excluded banking, financial, and insurance firms (see Dechow et al.). The independent variables included the reported earnings, restated earnings, sales, and total assets. The dependent variables were the reported, restated, and economic earnings normalized using total assets (see Keung & Shih, 2014). I calculated the economic earnings by adjusting the reported earnings for the discretionary amount, the management earnings adjustments (see Brown et al., 2014).

My research inquiry into earnings management supported the publication of transparent financial information by publicly held firms applying the IFRS, identifying the management of firms as accountable to the investment community (see Ferreira et al., 2013). The reporting under the IFRS supported and promoted information transparency. Conversely, managers practicing earnings management attempted to subvert that objective (Mackenzie et al., 2015). Publicly listed firms offered securities for sale to investors who might invest like the large scale (investment) businesses and institutions with sophisticated analytical tools and knowledgeable analysts (Beneish et al., 2013). Small scale (even ignorant), individual investors targeted by publicly listed firms were investors who could be misled by asymmetric reporting; the small investors proved

vulnerable and figuratively easy victims for the low quality earnings data (Asli-Basoglu & Hess, 2014).

### **Findings From Analyses: A Summary**

My study involved evaluating the public financial reports from 2011 to 2014 of over 400 major public firms in 11 code law nations of Europe that collectively represented nine industry sectors in nonfinancial lines of business. The longitudinal study required the evaluation of differences between the firms' annual reported earnings and the economic earnings based on a paired *t* test.

The tests for Q1 of the 4 individual years showed 2014 as rejecting the null hypothesis, shown above in Table 19, and affirming earnings management occurring among the 432 firm years. The other years, including 2013, 2012, and 2011, tested negative individually. Conversely, when testing groups of years, the aggregates of all 4 years plus 3 years, 2014, 2012, and 2011, tested positive, affirming the occurrence of earnings management attributes. 2013 showed an extreme *p* value of .9675, shown in Table 19, and the 3-year *t* test, absent from the 2013 subset, had a lower *p* value, .0149, than the four-year test where  $p = .0279$ . The positive *t* tests, where  $p \leq .10$ , making the probability at or above 90%, identified the earnings management cases as years, firm years, or segment years where the differences proved at least 90% probable to be nonrandom and intended. The statistically significant, nonrandom differences revealed cases where earnings management attributes occurred or existed. The attributes appeared in a substantive proportion albeit a minority of the annual earnings of the four individual years and the aggregates of all four years plus three selected years, minus 2013.

Q2 evaluated segments or subsets of the 432 firms and 1,728 firm years by stratifying the firms as members of nine industry segments and domiciled in 11 nation segments. The *t* test identified one industry segment of 9 or 11% and 5 segment years or almost 14% as showing earnings management attributes, shown in Table 37. Similarly, the *t* test identified two of 11 nations or 18% and 10 of 44 nation years or almost 23% to show earnings management attributes, shown in Table 37. While a minority of the observations, the segments and segment years touched or impacted an aggregate or a total of four industry segments or 44% and seven nation segments or 64%, a significant proportion of both sets of segments or both aspects, shown in Table 37. The greater propensity for nations to display earnings management attributes reflected findings akin to prior research by Brown et al. (2014) and Gopalan and Jayaraman (2012). These researchers found that national and cultural character supported the view that firm managers tended to manipulate the reported earnings. The cultural influence impacted the managers of firms within those geographies. The cultural view likely affected only a portion of firms of any industry segment domiciled in the 11 nation segments (Stadler & Nobes, 2014). The firms were not identified individually.

Table 37.

*Q1 and Q2 Descriptive Statistics for P Values That Rejected the Null Hypothesis*

	Industry segments	Industries $p \leq .10$	Industry proportion	Nation segments	Nations $p \leq .10$	Nation proportion
Segments	9	1	11%	11	2	18%
Firm years	36	5	14%	44	10	23%
Aggregate	9	4	44%	11	7	64%

*Note.* *T* tests supported rejecting the null hypothesis where  $p \leq .10$ .

The analysis of differences between restated and economic earnings in Q3 provided an external validation of the results of comparing reported and economic earnings in Q1 and Q2. The *t* test of restated and economic earnings demonstrated high rates of correspondence between them; the differences proved insignificant. When I evaluated the industries, eight of nine or almost 89% of the industry segments and 30 of 36 industry segment years or 83% affirmed earnings management existed, shown in Table 38. Among the 11 nations, nine of 11 or almost 82% and 34 of 44 nation segments years or 77% failed to reject the null hypothesis. The findings affirmed the existence of earnings management and its persistent occurrence among the selected firms during the 4 studied years. The relatively similar rates among nations and industries somewhat conflicted with prior research findings, as nations tended higher in the works of Brown et al. (2014) and Gopalan and Jayaraman (2012). These authors found that industry segments showed a lower propensity of earnings management attributes while I found a slightly higher propensity among the industry segments. Notwithstanding the relative

segment rates, the earnings management attributes were apparent in many segments and segment years, sustaining the premise that pervasive earnings management represented a quality problem for European financial reports.

Table 38.

*Q3 Descriptive Statistics for P Values That Failed to Reject the Null Hypothesis*

	Industry segments	Industries $p > .10$	Industry proportion	Nation segments	Nations $p > .10$	Nation proportion
Segments	9	8	89%	11	9	82%
Segment years	36	30	83%	44	34	77%

*Note.*  $T$  tests generated  $p$  values that failed to reject the null hypothesis, where  $p > .10$ .

I discovered earnings restatements among 124 of the 432 firms or almost 29% of firms as an external validation. I matched the 240 firm year restatement cases to the corresponding firm year economic earnings, testing almost 14% of the 1,728 firm years, as shown above in Table 29. The paired  $t$  tests for differences between restated and economic earnings showed that a small minority of cases did not reverse or offset the earnings management. The results of the study established that earnings management appeared to be pervasive among the studied firms as well as in their nine industry sectors and 11 European code law nations even though they were viewed as compliant with the IFRS. I also established that the adoption of the IFRS by all these firms did not preclude or prevent the practice of earnings management by the managers running the firms.



Earnings management attributes persisted despite reported (audited) conformance with the IFRS as the basis for accounting and reporting governance.

### **Interpretation of Findings**

My research enabled me to quantitatively evaluate financial information to enhance my understanding and knowledge of earnings management as it relates to the Agency and Stewardship theories. The apparent persistence of earnings management attributes in the published earnings of about 29% of the studied firms domiciled in the 11 selected nations affirmed the significance and relevance of investigating this aspect of financial reporting. Managers made choices for discretionary accrual amounts within the confines of flexible accounting practices allowed by the IFRS that seemed to violate their roles as responsible agents and mindful or accountable stewards. The Agency and Stewardship theories presumed that managers focused their work on the best interests of all present and potential business owners and other capital market participants. Conversely, the managers manipulated earnings reports and undermined the quality of information that they presented to financial statement users in the capital markets. The non-permanent benefits of earnings management attributes likely facilitated short term benefits for the insiders like entrenched managers, but they failed in their obligations to the collective investment community of the global capital markets, including small, private, and non-sophisticated investors.

I divided the interpretation sections based on the three research questions in my research program. My discussions of the possible implications and conclusions of my individualized findings followed my investigative process for the analytical results. The

aggregated and synthesized interpretations and conclusions followed the three sections and represented the logical extension of my findings from my tests and analytics.

### **Interpretation of Q1**

In my evaluation of Q1, earnings management appeared in the year 2014 (of the 4 years studied), where the  $t$  test rejected the null hypothesis. The  $p$  value for the aggregate or combined four years rejected the null, recognizing that the 2014 result was not lost or diluted in the combined paired  $t$  test and aggregate evaluation. Similarly, the  $t$  test of the aggregate of 3 years, including 2014, 2012, and 2011, rejected the null hypothesis. The  $t$  tests affirmed that the firms operating under code law jurisdictions and conforming with the IFRS since the 2005 adoption year reflected earnings management attributes based on the discretionary accruals approach in this study. The study affirmed the concern expressed by Brown et al. (2014) that the standards without regulatory oversight would not likely overcome the cultural tendency to manage earnings reported to the public, those called outsiders. The firm's managers and majority stockholders, labeled insiders, enjoyed asymmetric information available to the few insiders, making it difficult for outsiders to make timely and appropriate investment decisions (Huang et al., 2013).

### **Interpretation of Q2 for Segments**

In evaluating Q2, earnings management attributes appeared in 5 of the 36 industry year segments or 14% of the cases and 4 or 44% of the industry segments, shown in Table 37. Viewing the firms in the study, 120 of 432 firms or almost 28% had segment years showing earnings management. With many firms and almost half the industries exhibiting the earnings management attributes, one conclusion was investment decision

makers risked using inaccurate data in 28% of the firms, their basis for investment. The industry identities showed regulators that the issues were pervasive; many industries demonstrated earnings management behaviors. The fact that one year showed symptoms did not reduce the risk for investors. The investors likely used multiple years of information when making investment choices and the investors might not trust any reporting. The decision usefulness of reporting was dubious.

I addressed nations segments in Q2. Earnings management attributes appeared in 10 nation segment years or 23% of the 44 segment years and they appeared in 7 of the 11 nations or 63%, more than half. Shown in Table 37, the firms domiciled in a majority of the code law nations in this research project reflected earnings management attributes collectively based on the testing. Investors using financial data from the firms in these nations needed to beware the accuracy and consider how they might mitigate the reporting risks associated with the publicly issued financial reports. The adoption of the IFRS in 2005 and maturing for 6 to 9 years by the study years, 2011 through 2014, failed to prevent or supplant the management behaviors that facilitated earnings management. Confirming prior research, including the works of Skinner and Srinivasan (2012) and Zéghal et al. (2012), managers expediently applied the IFRS flexibility to take discretionary action that generated asymmetric financial reporting that favored the minority of users called insiders over the small and unsophisticated investors, viewed as outsiders (Aerts et al., 2013).

Collectively for Q2, the interpretation of results could not overlook that the majority of the observable cases as industry and nation segments and segment years

failed to affirm the existence or occurrence of earnings management attributes. Failing to reject the null hypothesis meant many of Europe's firms in varied industries and nations did not appear to practice earnings management. The implication of the negative, the failure to reject the null, affirmed a positive, that the firms reported their earnings accurately and in conformance with the IFRS, such that financial statements delivered decision useful information to all stakeholders and users. The large proportion might indicate the absence of earnings management attributes in the firms in those industry segments. An alternative explanation was the dilution of impact of the firms that practiced earnings management; the majority cases affected the  $t$  test results. Similarly, stating that in the positive test cases, where the results failed to reject the null, the segments had a majority of firms exhibiting the attributes of earnings management even though some firms within the segments likely did not.

An alternate explanation was the method failed in effectively detecting the earnings management attributes. To wit, the application of discretionary accruals to determine the adjustments for calculating economic earnings did not identify the earnings management attributes. Prior researchers rebutted the possibility with the many cases they discovered using similar techniques and related models for developing their insights into the problems associated with earnings management. Brown et al. (2014) and Aerts et al. (2013) presented supporting and relevant findings as did other researchers investigating the quality problems in financial reporting like the manipulation of earnings reports. I enumerated and described many cases and aspects in the initial (Chapter 2) and extended (Chapter 5) literature reviews that indicated the concepts I used were effective

and the modeling methods I employed were considered dependable. I did not believe that the program failed and that my analyses did not identify the attributes of earnings management. The data collection and testing associated with Q3, attempted to externally validate the models and methodology and rebut critique.

Earnings management attributes persisted among publicly held firms domiciled in 11 code law nations of Western and Northern Europe during the 4 studied years, based on the tests used for Q1 and Q2. Although financial reporting of the studied firms in the public domain conformed to the IFRS, a finite proportion of the firms appeared to practice earnings management. My study results reflected the views of prior research, such as Capkun et al. (2016), who found earnings management persisted in the firms domiciled in members nations of the European Union despite claiming the IFRS conformance in the financial reporting. While my analyses discovered a minority of the firm years, about 13%, and segment years reflected the attributes of earnings management, 4 of 9 industry segments and 7 of 11 nations reflected the traits for either firm years or the aggregate, shown in Table 37. My combined review and synthesized interpretation of the results from the first two research questions related to their common approach to the data at distinct levels, aggregate in *Q1* and disaggregated on two attributes, the nation and industry segments, in *Q2*. While the risk of inaccurate data for financial decision making by investors was not quantitatively established, the presence of the attributes among the years and segments showed persistence. The appearance of the attributes of earnings management suggested reporting risk and degraded decision

usefulness when using financial reports issued by the large firms, defined where assets exceeded € 1 billion (euros), that I used in my study.

### **Interpretation of Q3 on Restatements**

I identified 124 firms and 240 firm years that published restated earnings, reflecting 29% and 14%, respectively. The latter measure, 240 firm years reflecting 14% of total firm years, more aptly demonstrated the reporting quality impact, shown above in Table 29. The former measure, 29% of firms, demonstrated the need for regulatory oversight based on the risk to investors investigating a firm vis-à-vis the financial reports using multiple years of earnings data. The risks appeared high that investors used low quality information for their financial decisions regarding 29% of the largest firms in the studied nations. The search for unpublicized earnings restatements attempted to confirm and validate the likelihood of earnings management investigated and identified with the tests of the prior two research questions. On a positive note for the validity of the study, the proportion of firms restating earnings were almost 29% compared to almost 28% of firms under industry segments in Q2, suggesting a correlation between the tests. All nation segments and all industry segments had firms with restatements, demonstrating the issue was pervasive; firms changed their reported earnings after publishing their financials, typically as the prior comparative result in the report issued for the following year. Conversely, 3 positive  $p$  values, where  $p \leq .10$ , were for small counts,  $n < 10$ ; the single digit firm year groups, where  $9 \geq n \geq 5$ , represented small sample sizes that made the results of the paired  $t$  test suspect and conclusions using them dubious. Besides that, a qualitative and suspicious view was most of the restating firms, 113 of 120, found

it appropriate to tacitly correct their reporting for undisclosed reasons. For the German firms, the German authorities did not identify and publicize the restatements except in two cases, and even those firms did not highlight the cause(s) in their financial statement notes.

Regarding investor protection, seven firms domiciled in Germany were somewhat visible when changing or restating their prior year earnings in the financial statements. The 113 firms, as  $113 = 120 - 7$ , had neither public notice nor financial statement notes specifying the basis for the restatement. Only German regulators highlighted two firms that needed to correct their reported earnings. Of 11 nations studied, Germany alone had regulatory reviews with publicly visible discovery. The state of restatement disclosures and public or regulatory scrutiny confirmed the view that the European code law nations needed to expand their oversight of the financial (earnings) reporting of publicly held firms to redress earnings quality for investors (Hitz et al., 2012; Strohmenger, 2014).

The restatements “matched” the economic earnings in 25 industry years of the 36 industry years, or 69% of segment years. The firms in 25 industry segments showed attributes of earnings management where the managers restated the earnings to reverse or cancel the manipulation. Of the 36 segment years, 25 evaluated with the  $t$  test that ran over .10; the  $p$  value, where  $p > .10$ , indicated a failure to reject the null hypothesis, establishing the differences between the normalized restatement and economic earnings were random and non-significant. Since they were not significantly different, they supported the hypothesis that the managers reversed or cancelled apparent earnings management by restating earnings. To confirm the view, Dinh et al. (2015) found the

discretionary item amount was the earnings management amount. The rest of the segment years, about 8 = 36 segment years – 28 tested successfully, identified 8 segment years that had no discovered restatements. The balance of the segments did not support the conclusion as they were not restating the earnings or were not matching the economic earnings with restatement. As an alternate view, it was possible but not tested that the eight segments not restating earnings might not want to highlight the earnings for investor or regulatory scrutiny.

Restatements redressed earnings management attributes as most nations and the majority of nation years failed to reject the null hypothesis. The differences between the normalized economic and restated earnings reflected random and non-significant differences; they effectively matched. With 4 nations and their 12 nation years in addition to 11 other nation years considered not testable meant almost half the 44 segment years lacked restatements; the results also indicated that managers rarely restated earnings. I might speculate that they did not need to restate the earnings, or it was possible that they might not view it important to correct or restate earnings even though the nation years had differences in economic earnings. The absence of 23 testable cases might prove to be the evidence vis-à-vis few cases that restatements did not occur.

### **Synthesized Interpretation**

The testing for earnings management attributes in the three research questions enabled a dual approach to the investigation. I compared reported and economic earnings in the first two questions and analyzed the results on multiple levels. I evaluated the apparent earnings management indicated when managers revised or restated their firms'



earnings by comparing the restated earnings to the calculated economic earnings in the third question. Finding attributes persisting in both approaches externally validated the individual *t* tests' results used in the three questions. Taken as a whole, the testing and analytics allowed me to conclude that managers in listed firms in 11 European code law nations manipulated their reported earnings (in a significant minority or about 14% of cases, shown in Table 37). Similarly, managers in nine industries domiciled and operating in those nations reflected earnings management attributes in almost 19% of the firm years. The managers of firms revised their reported earnings in a significant minority or 14% of firm years and 29% of the firms. Conversely, the results demonstrated that a majority of firms did not manipulate the reported earnings, 77% of nation segment years and 83% of industry segment years, as shown in Table 38. I confirmed the findings of Brown et al. (2014) that code law nations persisted in reflecting earnings management attributes despite the firms' conformance with the IFRS, confirming the findings of Pereira and Alves (2017) that the IFRS adoption alone did not improve reporting quality.

The managers undermined the confidence of capital market participants in the decision usefulness of the reported and published information. The quality degradation reduced the consistency of reporting between companies and degraded cross border comparability that should exist for companies domiciled in the same or different nations. Similarly, the results showed that investors considering alternative member firms in an industry could encounter low comparability as four of nine segments or 44% of the segments reflected earnings management attributes. Even though the minority of firms and firm years reflected earnings management attributes, the consistent appearance of the

attributes placed reporting risks of low reporting quality on investors and other users of published financial statements. The users' recognition or awareness of reporting risks undermined financial statement user confidence in the decision usefulness of published information. The results could include derailing small, private investors otherwise interested in direct foreign investment but lacking the sophistication needed to quantify the risks effectively (Beneish et al., 2013).

### **Commentary on the Bias in the *T* Test and *P* Value**

I used the *t* test to make inferences about my data. The *t* test result, the *p* value, informed me that I could figuratively, "probably," reject the null hypothesis, or I could figuratively, "probably," fail to reject it. The model was probabilistic as opposed to certain (Dixon et al., 2015). I repeated the *t* test many times as I evaluated the pairs of normalized earnings figures by year, by nation and industry segments, and by collective groups of years, always comparing two normalized earnings figures per firm year to determine the significance of the difference. The paired *t* tests enabled me to evaluate the hypotheses for three research questions. The process, called the *null hypothesis significance testing*, carried a risk or bias for testing the significance (Nuijten, Hartgerink, Assen, Epskamp, & Wicherts, 2016). The criterion for significance that determined if I rejected the null hypothesis (in each paired *t* test) was  $p \leq .10$ , and that criterion carried a higher risk of erroneously rejecting the null than a lower rate, such as the value often used, such as  $p \leq .05$  or even  $p \leq .01$  (Wasserstein & Lazar, 2016). (I discussed the optional choices for the criterion value in Appendix B.) The name used for the bias was a Type I error, literally the error associated with erroneously rejecting the null and inferring

the tested difference was significant and non-random. By increasing the  $t$  test criterion, or  $p$  value, I increased the probability and risk of falsely rejecting the null hypothesis. I increased the proportion of the distribution known as the *region of rejection* when I applied the criterion of  $p \leq .10$  versus the more conservative, lower rate of  $p \leq .05$  (Hinkle, Wiersma, & Jurs, 1998). The increased  $p$  value increased the likelihood of a false positive  $t$  test result or Type I error and similarly increased the probability of erroneously rejecting the null hypothesis. The  $t$  test bias could weaken my arguments using the analytics supporting my interpretations and conclusions. However, Hinkle et al. (1998) found that the less conservative criterion supported discovering a trend or proportion in data like my financial earnings information despite the increased risk of the false positive evaluation of the hypotheses. Evaluating the hypotheses tests with  $p$  values excluded as marginal by a more conservative criterion could detract from the somewhat pioneering study for discovering trends in earnings management attributes among firms in the code law nations of Europe.

### **Compare New Research to Chapter 2 Literature Review**

#### **Extended Literature Review**

Consistent with my earlier research discussed in the Chapter 2 literature review, the scarce but ongoing earnings management research reflected or discovered sparse new cases of regulatory action or scrutiny in code law Europe. Few German firms appeared in public notices for earnings management, affirming my own research in restatements where few examples appeared in the public view among my study cases. The German regulatory agency, Federal Financial Supervisory Authority (Bundesanstalt für

Finanzdienstleistungsaufsicht or BaFin), tested about 12 to 20 firms annually of the more than 600 firms listed and private within their auspices and authority in Germany (Federal Financial Supervisory Authority, 2017). The publicly visible review process continued as a limited and selective test each year, addressing publicly identified segments or issues and limiting the firms scrutinized for misstatements, whether errors or intended (Federal Financial Supervisory Authority). The Federal Financial Supervisory Authority published its latest annual report in the Fall of 2017 for the prior year.

A publicized example of asymmetric information, Storbeck (2017) found the Federal Financial Supervisory Authority alleged the managers of Metro AG failed to disclose information timely on the separation of its electronic retail. Selected managers used asymmetric info, defined as info withheld from outsider investors, to trade stocks before a price swing resulting from the publicizing the so-called spin-off. Germany was unusual in this practice for a code law nation as it provided investor protection with its regulatory environment. By example, the German firm Energie Baden Wuerttem, also called ENBW, had to publicize regulatory action for earnings corrections or restatements based on the German regulatory program under the auspices of Federal Financial Supervisory Authority (Federal Financial Supervisory Authority, 2017). With a wider geopolitical reach, Hodge (2017) found the European Commission prosecuted the firms and collected fines for convictions and through settlements when firms domiciled in the European Union proved to behave like a monopoly or cartel. The consumer protection was far more aggressive and pervasive than investor protection. Another trait of European prosecution was the tendency to significantly reduce fines by managers

confessing the behavior and submitting to the justice system instead of high cost investigations proving the guilt.

On a positive and progressive note, Brähler, Scholz, and Kalytta (2015) found German enforcement served large and small firms without bias. The authors affirmed that the two-tiered system in Germany identified selected reporting errors and redressed them. Conversely, a minority view, Elbakrya, Nwachukwub, Abdouc, and Elshandidyea (2017) found the information asymmetry reduced in their study of the financials published before and after the required the IFRS adoption at 2005 in code law nations like Germany. Their findings supported the view that German enforcement efforts had sufficient efficacy to improve the reporting.

Generally representative of the ongoing research, Pereira et al. (2017) found earnings management persisted after the adoption of the IFRS (in 2005). The authors used discretionary accruals through the application of the Dechow et al. (2013) econometric model to indicate that Portuguese firms continued to reflect attributes of earnings management. Pereira et al. used a longitudinal model during the years from 2005 to 2015 to study and explore the earnings management symptoms. The authors affirmed my study and provided an update on the Alves (2014) work in Portugal as an example code law nation. Dilger and Graszitz (2015) found earnings management persistent in Austria and Germany despite the IFRS and German regulatory oversight and enforcement. The authors refuted recent observations by other researchers that earnings quality improved. Ebaid (2016) found the IFRS failed to improve accounting and earnings quality in Egypt, a code law nation, despite the quality of the standards, which

were the IFRS. The quality of earnings and the deterrence of earnings management were positively related to the regulatory oversight and enforcement within the jurisdiction. The more recent research affirmed the continuing persistence of managers practicing earnings management and degrading the quality of earnings reported under the IFRS.

Sansar and Gamze (2017) found the capital markets tended to favor the insiders, whom the authors labeled privileged. The privileged managed many firms or served as institutional investors with skills and resources. The authors found small investors were disadvantaged; the small investors did not succeed with their knowledge, skills, and information that was asymmetric and not sufficiently accurate and timely for their investment decisions. Takamatsu and Favero (2017) affirmed the persistence of asymmetric information in Brazil, another code law nation, despite the IFRS adoption. Information from listed businesses continued to be opaque while a stated goal of reporting under the IFRS presumed transparency in reporting and disclosures. Opacity and asymmetry were recognized symptoms of earnings management. Similarly, Bolmiri, Gardoon, and Kahkesh (2016) found managers at Iranian firms practiced earnings management. The authors found earnings quality related positively to the ability of managers to effectively and efficiently maximize growth and earnings through their collective ability. They used proxies including restatements and discretionary accruals to identify earnings management attributes where the managers' ability failed to sustain the firm and maximize firms' results; the managers used earnings management to artificially improve earnings and other results. The methods continued to prove effective for scholarly research into the manipulation of financial reporting and earnings. They

concluded that managers will report performance improvement despite deteriorating tangible results. Researchers like the foregoing demonstrated the ongoing need for earnings management research. Regulators needed the continuing sources of insights into the earnings management symptoms and low quality financial reporting. The regulators needed the insights to improve the global capital markets through higher quality reporting, especially cross border comparability, for investors worldwide.

Ongoing research affirmed the manipulation of earnings using the discretionary accruals. Dinh, Kang, and Schultze (2016) found research and development costs in German firms persisted as a means to manipulate earnings vis a vis the discretionary earnings adjustments like accruals in the form of variable amortization amounts. While the investor perception focused on the benefits of innovation indicated by research expenditures, the flexibility managers exercised and displayed in determining the amount to charge to expense facilitated earnings manipulation. Wilford (2016) found that code law countries with weak enforcement seemed to enable managers to misstate or manipulate reported earnings. The author studied foreign firms reporting for the listed U.S. units and that managers in strongly regulated foreign counties tended to publish high quality earnings information. The authors affirmed my thesis and findings, that earnings quality paralleled the strength of regulatory oversight and financial reporting enforcement. Francis, Hasan, and Li (2016) found that the IFRS facilitated high quality earnings reporting where strong regulatory environments existed. Conversely, weak enforcement jurisdictions and nations enabled managers of listed firms to leverage discretionary accruals to manipulate earnings and to display the attributes thereof.

Additional European studies expanded the nation centric information on earnings manipulation and low quality earnings reports. Lindahl and Schadéwitz (2018) investigated the financial reporting quality of firms in the Eastern European Bloc nations and the asymmetry of information proffered to the investment community. Thinggaard (2017) studied the reporting quality in Denmark and the role played by the adoption of the IFRS since 2005. Cerqueira and Pereira (2017) explored earnings quality in the European Union and the effect of discretionary accruals on reporting quality issued by firms to the capital markets.

The U.S. studies in earnings management continued to occur as its importance persisted in the regulated U.S. jurisdiction. Karpoff, Koester, Lee, and Martin (2017) explored erroneous financial reporting including restatements captured in government and financial databases. The authors' work affirmed the United States continued to struggle with significant cases of earnings management and erroneous earnings reports despite the robust investor protection that was largely absent in the European Union. Germany was an exception, evidenced by the insights from Storbeck (2017). Campbell and Yeung (2017) studied earnings restatements in the U.S. economy and how the restatement events negatively affected cross company comparability. The authors found restatements delayed the delivery of information for investors to make informed investment decisions; improving earnings quality through restatements meant the decision quality information was not timely. The U.S. research continued in the earnings management as new cases and attributes surfaced and scholars explored the cases for new insights.



Regarding the social impact of my study, Weetman (2018) affirmed the positive influence of published accounting research on the regulators in Europe who oversaw financial reporting. The authors shared cases where policy makers in Europe followed recent research to make their legislative and regulatory choices. The use of my study results could impact the regulatory environment and support protecting the small investors from managers presenting asymmetric information that derailed the investment decisions they made.

### **Conceptual Framework**

Some managers presented financial statements with attributes of earnings management, undermining the quality of reported earnings for financial report users. Those managers failed to fulfill their responsibilities to owners, investors, regulators, analysts and other financial report users when viewed from the perspective promulgated by the Agency and Stewardship theories. In the cases where the earnings reports reflected the attributes of earnings management, the managers exercising biased discretion for reported amounts failed to serve the users as attentive agents who should maximize the investors' benefits by acknowledging the primacy of the investors' interests. The investors needed accurate information absent management bias to make decisions in the investors' best interests. The managers also failed to serve the owners as beneficial stewards and loyal servants of the investors. When they appeared to manipulate reported earnings, the managers regarded their own-interests above employer investor interests. Reporting inaccurate financial results when investors needed investment decision quality

data meant the managers in those cases considered their own immediate needs as more important than the statement users' needs (Al Farooque, 2016).

On a broader scale, the managers who misstated earnings or practiced earnings management failed in their agency and stewardship to the global capital market. Those managers who misstated reporting undermined the earnings quality in reporting that conformed with the IFRS, confirming the findings of Wilford (2016). Where managers failed their firms' owner investors, they also failed to demonstrate that the IFRS could deliver comparable, consistent reporting with high quality earnings (Francis et al., 2016). The investors' awareness of the risks that reports reflected the attributes of earnings management reduced cross border comparability. Investors needed to compare reported earnings and returns between firms in the same and different nations and industries. The risk that misstated earnings persisted served as a deterrent to using information by aware investors or facilitated suboptimal or wrong investment decisions by unaware and unsophisticated investors. Both cases support the view that managers presenting misstated earnings or reporting earnings reflecting earnings management attributes drove the investors to assign blame to the standards for the low quality of reporting. The concerns of the investors that the IFRS conforming reporting failed to generate high quality information undermined the reputation of the IFRS (Francis et al.). I found it important to note that the majority of firms issuing the financial reports using the IFRS presented reports without earnings management attributes, shown in Table 38, indicating the managers at those firms fulfilled their roles under the Agency and Stewardship theories. Viewing the evidence where I compared the reported and economic earnings

and where I discovered restatements, which I compared to economic earnings, the findings showed a majority of firms reporting earnings accurately and in conformance with the IFRS. The dearth of earnings management attributes in the majority of the firms, addressed to a granular level with my studies and analyses of nation segments and industry segments, affirmed that the majority of managers fulfilled their obligations under agency and stewardship theories.

On a national level, lawmakers and regulators failed to demonstrate agency for their investor constituents when the national jurisdictions failed to address earnings quality with investor protection action. Regulatory activity failed to review and redress evidence of earnings management attributes (Wilford, 2016). The application of Agency and Stewardship theories could apply to the regulatory and lawmaking bodies in jurisdictions where public scrutiny was withheld, virtually all the code law nations studied (Francis et al., 2016). Germany showed some activity in this area, but the process was far from robust when the process targeted only selected firms on published criteria. The German regulatory process, in effect, warned targeted economic elements at the beginning of each year, affirming the findings of Brähler et al. (2015) that Germany enforced its standards openly and uniformly without bias toward industries and large or small companies.

### **Limitations of Study**

My study did not involve identifying and investigating individual firms and their management teams. My study used firm year earnings and other data points to determine the potential for earnings management attributes among groups of firms. The

investigation identified fiscal periods (years) and segments (nations and industries) where attributes appeared to exist or occur. Indications of earnings management attributes did not identify the specific firms. Financial statement users and regulators needed to know that a significant minority of firms manipulated the reported earnings. Investment decisions needed to consider that information could be inaccurate. I could not tell investors to avoid accepting information for certain firms where financial reporting quality and accuracy were dubious and not useful for decisions without analysis and scrutiny.

My goal for my study was to determine if earnings management attributes persisted in segments like nations and industries as I wanted to encourage the social benefit associated with the improvement of investor protection vis-à-vis laws and regulatory oversight. I also wanted investors to have general awareness that information might be less than transparent and genuine for their decision making. My study and testing did not focus on identifying specific firms that reflected the attributes of earnings management. Finding nation segments where it persisted could drive regulatory action through visibility in that nation. Industry earnings management cases could affect multiple nations, and my identifying industry segments might encourage a review of the accounting standards enabling or facilitating earnings manipulation. The revisions from a review might preclude future earnings management attributes because the updated standards successfully deterred managers' discretion and flexibility. The correlation of firms common to a nation and industry segment might foster both events, but that work was outside of the scope of my current work.

## Recommendations for Future Research

Additional research would improve the study of earnings management in Europe. In future research, I would expand the selection of firms to other nations in Europe as well as the IFRS using nations in other geographies. I would also target more years including more current time periods in a longitudinal study, but I would want nations mature in their adoption. My study subjects used the IFRS five years prior to my study. Different studies addressed the early adoption periods, such as the work of Loyeung et al. (2016) in Australia. I also envisioned my future research focusing on more intense analyses, where I tested the correlation of the firms in the nation and industry segments where I detected earnings management. By example, the utilities sector, GICS 55, indicated the need for further study as three years showed a marginal probability, one lying above 80% but below 90%. The sector showed three  $p$  values at  $.20 > p > .10$ . Refining the modeling and exploring the sector were two possible avenues of study.

I believed another segmentation would add value to my future investigations. I would stratify the firms by size (based on assets or sales). I could augment my work with the current study firms by addressing the size segments using my models and evaluation procedures from the second and third research questions. I could correlate the data for indications of industry or nations with firm size as another avenue that would build on the firm size segment and potentially augment the results of the data set already assembled for my current work.

The lack of restatement research and even attention in the IFRS jurisdictions suggested this area deserved additional inquiry and research. Increasing the attention of

regulators on the quality of reported earnings and the management processes inferred by restatement discovery made this aspect of research potentially impactful for regulators and investors alike.

I could change the tests and modeling to enhance or redirect my study of earnings management. I believe the tests using the analysis of variance or ANOVA process would support new insights into my search for significant differences, as described by Shanker (2016). Basic elements I used in developing the discretionary accrual element might benefit from changes, such as partitioning the rate of change for some elements using the change in the cost of sales for elements like depreciation and amortization, rather than unilaterally apply the change in sales. I might change the elements used in the formula for the discretionary accruals as some studies isolated the impact of selected elements rather than the collective of many elements, which provided different insights. I would investigate using the cash flow (statement) and its components to enhance the study. A narrow study of one nation or industry might support stratifying the discretionary item elements to and correlate the impacts of each. My future work would entail building on and enhancing my prior segmented research to determine high and low risk elements in the firms domiciled in European code law nations. Moving to other geographies would offer reapplication options of more refined modeling and acumen.

### **Positive Social Change**

The goals for financial reporting in conformance with the IFRS was the publication of consistent and comparable financial statements without regard to the nation domiciling the firm(s). Investors needed quality information for decisions whether

considering domestic or foreign firms for their investment capital. The lack of dependable quality degraded the comparability and decision usefulness of financial (earnings) reporting in 29% of firms, using the restatement proxy, across 11 European nations operating in 9 industry segments. The results indicated a substantial risk of deciding to select a firm providing decision useful information; the investors had low double digit, from 14% to 23%, based on the segment analyses, probability of using information that would fail the quality tests for consistency and comparability. Since the specific identity of the firms reporting less than high quality information remained elusive to this study, risk for investors would run higher than the proportions shown above.

Investors and other reporting users needed consistent and comparable information quality to ensure its decision usefulness. While the sophisticated professional investors might recognize the risks of low quality and search for the attributes that demonstrate low quality, the unsophisticated and small investors suffered the greatest risk due to their lack of capability and awareness. Small investors are ultimately consumers of financial products and services; they needed protection from unscrupulous firms publishing information that supports the wrong consumption decisions. The regulatory environment often offers the only likely protection in the form of public agency scrutiny and the demand for robust audit programs. These attributes often differentiated the common and code nations and the level of investor protection offered in those jurisdictions.

Christensen et al. (2015) found improved earnings quality in Germany following the implementation of the regulatory scrutiny of financial reporting. Nouri and Abaoub

(2015) similarly found improved earnings quality in France following the adoption of some elementary level of investor protection.

I hoped regulators would notice the research that I and others offered over time to enhance the protection offered the public investors too easily victimized by the minority of firms that appeared in my study with earnings management attributes. Akisik (2013) found regulatory action improved financial quality metrics in the capital markets in Europe among selected code law nations. A 10% segment reflecting earnings management attributes effectively set the risk of using poor quality information at 10% in addition to the risks already associated with financial investment decisions. The regulators in code law jurisdictions like those studied had example legal environments among the common law jurisdictions where investor protection was more robust and proactive (Dayanandan et al., 2016).

### **Conclusion: Q1 and Q2**

The analysis of the four sets of firm years and the collective years of reported and economic earnings identified cases of earnings management attributes in double digit proportions. Significant proportions of the nation and industry segments, almost 14% and 23%, respectively, shown in Table 37, indicated earnings management. Investors needed regulatory oversight and support for the quality reporting that enabled effective investment decisions.

Even though a large sample, 432 firm years per year and 1,728 firm years collectively, the paired *t* tests proved positive for the year 2014 alone as well as for the collective 4-year and 3-year paired *t* tests. Somewhat contradictory, the *t* tests conducted



for the years 2011 and 2012 proved negative yet when included in the aggregate testing, the  $p$  values supported rejecting the null hypothesis and affirmed the earnings management existence. The earnings management attributes appeared and occurred least frequently in 2013, and for that year failed to support rejecting the null hypothesis; the  $t$  test found  $p > .10$ . The test results showed 2014 and the 4-year and 3-year periods to exhibit the earnings management attributes; 2013 was the outlier. My research program demonstrated that earnings management attributes appeared pervasive among the nations and industry segments during the years 2011, 2012, and 2014 substantive; statistically significant and non-random differences occurred between the reported and economic earnings in the year 2014 and the aggregated 4-year and 3-year cases. The test procedures established that the attributes of earnings management existed, but the collective measures by year and overall provided in this element or research question of my study failed to highlight descriptive attributes like domiciling nation and industry segments. The evaluations in the following research question explored the condition in stratified subsets or segments, enabling me to look for the nations or industry segments that might provide more actionable insights and more credible evidence for generalizing and concluding.

### **Conclusion: Q2 on Industries and Nations**

The eleven nation segments showed more concentration of the restatements than the nine industry segments, which indicated the nation as legal jurisdictions presented more robust evidence for generalizing than the industry segments. The industry segments crossed national boundaries; the national concentration suggested that the legal

environment combined with the expedient behavior related to manipulating or managing earnings was a social or cultural trait that succeeded or persisted in selected jurisdictions and their geographies. The concentration of restatements could depend on the weakness of such national or jurisdictional attributes as auditor independence, governance power, code enforcement, and other investor protection regulations and enforcement. The investor protection laws and regulator enforcement constrained financial reporting manipulation that resulted in low quality earnings, confirming research other authors published, such as Dilger and Grascitz (2015) and Sansar and Gamze (2017).

Where the earnings management attributes appeared in a few industry segments, a possible explanation could involve the concentration of firms in those industry segments primarily domiciling in the jurisdictions where earnings management persisted. The cases also supported the view that selected industry segments might leverage figurative gaps or oversights in the standards that not all industries could apply. Such explanations of weaker industry results were speculative. Data to support such conclusions would require new research to identify the particular nation and industry relations as well as the IFRS elements that might correlate with earnings management attributes.

### **Conclusion: Q3 on Restatements**

My discovery of restatement cases tested the results of my modeling, confirming and validating the discretionary content of reported earnings reversed from the economic earnings research. Matching the restatements and economic earnings facilitated the recognition of their similarities on a firm year basis using the paired  $t$  test. Few of the differences between the paired restated and economic earnings drove  $p$  values that

rejected the null hypothesis, affirming their general equality and their seeming if not suspicious restoration of the correct earnings for reporting. I perceived that when firms restated earnings that equated to the economic earnings, the managers affirmed that the economic earnings more accurately reflected the firms economic state when the original reported earnings appeared in the initial financial statements. I perceived that the positive news was less than 14% of firm years reflected restatements, affirming the general rates of earnings management attributes, low double digit per cents, identified in the prior two research question evaluation processes. More than 10% of the segment years generated positive  $t$  test results; positive results were the rejections of the null hypotheses where  $p \leq .10$ , meaning they supported the position that the earnings management attributes persisted in those segments.

Restated earnings appeared to cancel or offset the discretionary accruals used to adjust the reported to the economic earnings in about half the segments. Conversely, about half the segments did not reflect restatements and could not reverse the manipulated earnings indicated in prior tests.

The need for indirect discovery of the majority of restatements indicated another issue. Loyeung et al. (2016) labeled them *stealth restatements* to acknowledge that the restatement appeared without recognition in reporting in following periods. More European jurisdictions needed investor protection laws and their enforcement enhanced. The German solution appeared to indicate a nascent cultural change under the code law regimen, but investigation and enforcement was selective, making the regulatory efforts occasional for a given firm and industry. The enforcement actually appeared sporadic.

While more aggressive than other European code law jurisdiction, Germany's redress of low reporting quality remained relatively weak as the regulations and minimal enforcement enabled the managers at firms to practice earnings management. The absence of such enforcement efforts in other jurisdictions besides Germany was a gap for investors' interests in comparable financial reporting within the nation and across borders where the investors also used the reporting.

The firms without visible restatement in some nations, characterized by nation years without sufficient cases to make the  $t$  test possible and the  $p$  values calculable, might mean they did not consider the publication of earnings corrections important. The situation of few or no restatements could also mean that the firms in those nations did not have changes to report as earnings restatements. The discovery of restatements was important to the study from the view that restating reported earnings might tacitly indicate reversals of earnings management without managers disclosing or admitting the situation.

The determination that the restated earnings matched the economic earnings supported the view that the corrections could represent the reversal of the discretionary adjustment, which was the cancellation of the manipulation (without determining why managers reversed it). When the restatement and economic earnings did not match, I perceived that the correction did not reverse or cancel the abnormal discretionary adjustment and was not relevant to the earnings management study. In such a case, the restatement actually corrected an error or represented another (undisclosed) change, such as an accounting change, a status  $t$  tests supported for 16% of the restatement cases.

**Conclusion: A Closing Message**

The capital markets and their investors needed higher quality financial accounting and reporting standards than evident in the four firm years I studied. The large, publicly held firms of 11 code law, European nations did not deliver uniformly dependable financial reporting that was decision useful for investors and other capital market participants. The results of the study indicated that earnings management appeared to be pervasive among the studied firms as well as in the selected segments, the industry sectors and nations. My work confirmed that the adoption of the IFRS by all these firms did not preclude or prevent the practice of earnings management by the managers running the firms and performing the financial reporting functions. Earnings management attributes persisted despite reported (audited) conformance with the IFRS as the accounting and reporting governance. The results of my study indicated that the firms and their jurisdictions or nations should consider additional factors to deliver dependable and consistent financial reporting. The German regulatory approach for redress appeared as a nascent effort by one nation I studied, and it proved less than effective with the few cases I found it addressed. Less impactful, Nouri and Abaoub (2015) found earnings quality improved in France after legislating and enforcing its own nascent investor protection actions. Small “outsider” investors needed the protection from unscrupulous managers who failed in their agency and stewardship who published manipulated earnings information.

The managers of more than a quarter of the firms restated earnings, driving reporting risks in the initial published results. The restatements meant late information

published for use by capital market investors and others. Small investors were the easy targets as victims, as they were the investors more likely to make decisions without the benefit of sophisticated evaluation skills and professional market acumen. The small investors needed to gain access to the global capital market to maximize their investment returns, but they depended on and presumed quality information (Beneish et al.,2013). Timely and quality financial reporting should provide large and small investors with decision quality information (Wilford, 2016). The global investors needed cross-border comparability, another important attribute for fostering appropriate decision making for direct foreign investment, but earnings management and inconsistent regulatory oversight undermined cross border reporting integrity (Cerqueira & Pereira, 2017).

Decision quality information would improve the likelihood of appropriate decisions by all investors, currently less likely for the small, unsophisticated financial report user. The success of small investors depended on the investor protection laws and regulatory action largely absent in the studied nations. The quality of information would also improve the allocation of capital equitably and globally, supporting the provision of capital infusions that could improve the economic position of emerging geographies seeking commercial development (Sansar & Gamze, 2017).

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## Appendix A: Research Mathematical Standards and Models

### **Assumptions for Variable Names follow:**

Variable names could be one or more letters or symbols, such as  $N_{fy}$  and  $S\%_{ofy}$ .

Variable names could carry arrays of data with index values in subscripts, like  $N_{if(y-1)}$ .

The index values were typically positive whole numbers and ordinal data points.

The subscripts  $i$ ,  $f$ , and  $y - 1$  represented the segment, firm, and year, respectively,

where  $y - 1$  indicated the year (number) prior to the year  $y$ .

### **Operators and logical symbols are as follows:**

“+” was the operator for addition.

“-“ was the operator for subtraction.

“x” was the operator for multiplication. There was no inference of multiplication where two letters were together without operators. (Variable names could be two letters.)

“/” was the operator for division.

“ $\Sigma$ ” represented summation. It was the upper case, Greek letter, sigma.

“ $\Delta$ ” represented the difference or change as a logic device only. It was the upper case, Greek letter, delta.

“ $\sigma$ ” represented the standard deviation from descriptive statistics. It was the lower case, Greek letter, sigma.

Note. I adapted math nomenclature, the operators and logical symbols from Dixon et al., 2015.

## Appendix B: Evaluating the Hypothesis With a *P* Value

The American Statistics Association stated the phrase *statistically significant* traditionally applied to probabilities greater than 95% or .95, which equated to *p* values less than 5% or .05, the additive inverse of the 95%, based on the equation  $5\% = (1 - 95\%)$  (Wasserstein & Lazar, 2016). The association discussions recorded points refuting the rate as a technical significance, but rather a rate used for teaching and examples. The authors stated that researchers should develop a rational level for significance based on the data under review and testing. Following Dechow et al. (2012) and Zéghal et al. (2012), this research testing of hypotheses used a *p* value of  $p \leq .10$  or a probability at 90% as reasonable assurance of significance. While double the traditional teaching and example value of  $p \leq .05$  with the probability or confidence at 95%, the 90% probability presented a stratification of the results across the broader (10 point) range as well as presenting a slightly smaller drop from 95% to 90% for evaluating the hypotheses related to the dynamic earnings management study (Wasserstein & Lazar).