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MSc IN BANKING AND FINANCIAL MANAGEMENT

MASTER'S THESIS SUBJECT:

Earnings Management by Firms Involved in Mergers and Acquisitions.

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Abstract

The objective of this study is to investigate whether publicly traded acquiring firms engage in earnings manipulation prior to stock financed merger and acquisition deals. I examine a sample of 52 stock for stock mergers and acquisitions by German, French and United kingdom publicly-listed acquiring firms completed between 2005 and 2015. Earnings management is measured by discretionary total and working capital accruals obtained from the cash flow statement on the basis of the standard Jones Model (1991). The results indicate that German, French and UK-listed acquiring firms manipulate earnings upward in the year prior to the merger announcement. Further analysis indicates that the degree of earnings manipulation through discretionary accruals is positively related to the acquirers' performance in the year prior to the announcement of the deal.

Keywords: mergers and acquisitions, earnings management, stock-financed mergers and acquisitions, accruals, Jones Model

CONTENTS

1. Introduction

In a competitive business landscape, merger and acquisition activity constitutes a favorable choice for business to expand their position. Mergers and acquisitions provide a significant opportunity to corporate groups to achieve better competitive advantage, significant revenues and business growth, as well. It is generally proved that the condition which maintains to the capital market influences to a great extent the merger and acquisition activity. In essence, merger and acquisition activity is increased or decreased considering the economic growth or recession which prevails on the capital market. Prior studies have indicated that this business' activity comes in waves, with the first wave to point out at the end of the 19th century. In 2007, the global merger and acquisition activity was in the peak. The economic crisis which erupted in 2008 by the downfall of the Lehman Brothers in United States brought the end of this globally unprecedented growth, nevertheless. The first sign of economic recovery occurred in 2011 in developed countries and, then, firms were activating again their merger and acquisition plans with the view to encounter the sluggish organic revenue growth and limited operating margin improvements that existed in previous years.

Prior literature review has indicated that the firms which participate in merger and acquisition deals, worldwide, have significant incentives to manipulate earnings prior to the announcement of the deal in order to achieve better purchasing price of the target firm. Namely, the merger and acquisition deals could be financed via cash or stocks. Stock financed mergers and acquisitions pointed out significant levels at the end of the 20th century (Martynova and Rennboog, 2005). In stock financed mergers and acquisitions there is evidence that acquiring firms manipulate earnings upward prior to the announcement date of the deal (Erickson and Wang; 1999, Louis; 2004, Botsari and Meeks; 2008, Rahman and Bakar; 2002). On the other hand, in cash financed mergers and acquisitions there is no significant evidence of income increasing ahead of the announcement of the deal (Erickson and Wang; 1999).

The objective of this study is to investigate whether acquiring firms engage in earnings manipulation prior to merger and acquisition deals during the period 2005-2015. The analysis is based on 52 publicly traded firms from three different developed European countries, Germany, France and United Kingdom. The choice of the firms' nationality based on the fact that these countries appear significant economy by nominal GDP and have significant industrial sector. Namely, Germany has the world's fourth-largest economy by nominal GDP, it is a global leader in several industrial and technological sectors and it is the world's third-largest exporter and importer of goods. France is a developed country with the world's sixth-largest economy by nominal GDP. United Kingdom has the world's fifth-largest economy by nominal GDP and it was the world's first industrialized country and the world's foremost power during the 19th and early 20th centuries. I determine as investigation period the period between 2005 and

2015 because this period include both years prior to the economic crisis and after. In 2007 the merger and acquisition activity reached significant levels in these countries. After the eruption of the economic crisis the decline was undeniable. In 2011 publicly-traded firms from these countries recovered their merger and acquisition activity in significant levels after a period of recession and point out the highest levels in 2015.

The results of this study indicate that publicly traded acquiring firms from these countries, in total, manipulate earnings prior to the announcement date of the deal through discretionary and working capital accruals. Further analyses suggest that acquirers' extent of earnings management is an increasing function of their performance, measured by the index return on assets in the year prior to the announcement of the deal, and a decreasing function of their debt ratio when they desire to obtain debt restructuring of an existing debt covenant. Finally, there is evidence that German, French and UK-listed acquirers engage in earnings management to a greater extent during periods of economic growth rather than during periods of economic stress.

This study proceeds as follows. Section two provides a significant background of the earnings management and mergers and acquisitions. Section 3 describes the research design, sample and data. Section 4 present the main result and a multivariate analysis which conducted based on these results. Section 5 concludes the study and points out the main results.

2. Earnings Management and Mergers and Acquisition Deals

In this chapter several features of Earnings Management will be interpreted with the view to attain an institutional background for this significant subject. Next, a definition of the term Mergers & Acquisitions will be provided. Moreover, I will exhibit the connection between earnings management and mergers & acquisitions and finally, I will report previous literature which has strong connection with my study.

2.1. Defining Earnings management

Financial reports reflect information about the financial performance and the financial situation of entities. This information is incredible useful to externals capital providers so as to make financial decisions concerning to their funds allocation. External capital providers are these users of accounting information who provide funds to entities in order managers of these entities to accomplish to finance and complete financial projects that have positive net present value and therefore increase the firms' value. Apart from that, it is an undeniable fact this information that provided by financial reports is also useful to other units that have strong connection with the activities of entities. These units are banks, creditors, stakeholders, managers etc.

In an efficient market, this information that represented in financial reports has to be credible so as to counteract information asymmetry. At this point the contribution of standards setters is significant. In essence, standard setters facilitate the communication between managers and firms' external stakeholders by define the accounting language which can be used for effective communication and collaboration between these two units. In particular, accounting standards provide an accounting framework   which can be enforced by managers so as to have a low-cost and credible mean to report information on their firm's performance to external capital providers and other stakeholders. Apart from that, accounting principles provide some specific qualitative characteristics that accounting information should have. These characteristics have to do with the relevance, faithful representation, comparability, verifiability, timeliness and understandability of the accounting information. If the above characteristics prevail in accounting information and therefore in financial reports, firms with best performance in the economy can easily distinguish themselves from poor-performing firms and with this way, the efficient resource allocation can be achieved. Given that, in accordance with Healy and Wahlen (1999), standards add value if financial reporting and standard setting permit financial statements to effectively portray differences in firms' economic positions and performance in a timely and credible manner. In accomplishing this objective, standard setters are expected to deal with conflicts between the relevance and reliability of accounting information under alternative standards. In particular, Healy and Wahlen (1999) state that standards that over- emphasize credibility in accounting data are likely to lead to financial statements that provide less relevant and less timely information on a firm's performance. Otherwise, standards that stress relevance and

timeliness without appropriate consideration for credibility will generate accounting information that is viewed skeptically by the users of financial reports. This may lead external investors and management to address to nonfinancial statement forms of information, such as that provided by investment bankers and financial analysts, financial press and bond-rating agencies, in order to promote the efficient allocation of resources.

As stated above, managers use financial report with the view to convey information on their firms' performance and position to external stakeholders, consequently standards must give the authority to managers to exercise judgment in financial reporting. Managers can then use their knowledge concerning the business and its opportunities to select reporting methods, estimates and disclosures that match the firm's business economics, potentially increasing the value of accounting as a form of communication (Healy et.al.1999). However, in light of the fact that auditing is not perfect, management's use of judgment also creates opportunities of "earnings management". In earnings management, managers choose reporting methods and estimates that do not accurately reflect their firms' underlying economics. So it is obvious that judgment of managers in financial reporting has both benefits and disadvantages. In particular, it is an undeniable fact that benefits include potential improvements in communication between managers and external stake holders. Apart from that, in accordance with Ronen and Yaari (2008) earnings management may enhance the value of information which provided by the financial statements in the case of permitting firms to distinguish normal earnings from one time shocks. Consequently, managers' judgment may facilitate and improve resource allocation decisions. On the other hand, the possible and obvious cost of managers' judgment may be the misallocation of resources that derive from earnings management.

With a view to comprehend to a greater extend what earnings management is, Healy and Wahlen (1999) indicate the following definition:

"Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (Healy & Wahlen 1999 p.368).

This definition proposes that motivation and opportunity are necessary so as to earnings management occur.

Moreover, some years later, Dunmore declares another definition of this term but with the same meaning with this which provided by Healy and Wahlen. Particularly, he states that "Earnings Management is influencing profit to achieve a predetermined result by management" (Dunmore, 2008, p. 32).

Furthermore, the same year, Ronen and Yaari in their literature provide three different definitions of earnings management. Namely, they classify Earnings Management

into three categories, white, grey and black Earnings Management. They refer that beneficial (white) earnings management improve the transparency of financial reports, adversely the pernicious (black) include utter misrepresentation and fraud. Finally, the gray category involves the managing of financial reports within the bounds of compliance with bride-line standards.

In essence, they mention that in white category of earnings management, earnings management is a tool used for flexibility of accounting information which managers apply as signal of their own exclusive information from their respective organization to share holders. In gray category, they mention that "Earnings Management is choosing an accounting treatment that is either opportunistic (maximizing the utility of management only) or economically efficient". Finally, in black category of earnings management they refer that "Earnings Management is the practice of using tricks to misrepresent or reduce transparency of the financial reports".

It is worth to be mentioned that managers have a great variety of tools so as to manipulate earnings. To begin with, standards setters permit managers to exercise judgment to financial reports. This judgment affect cost allocation and net revenues if it is related with the field of working capital such as inventory levels, the timing of inventory shipments or purchases and receivable policies. In essence, according to the accounting system, managers have the right to determine the specific period in which cost items and revenues will be recognized. For instance managers can decide the earlier recognition of revenues through credit sales (Teoh, Wong, et al., 1998). As a result, managers can easily manipulate the earnings. In addition, managers have to choose among accounting methods for reporting the same economic transaction such as inventory record methods, depreciation methods and amortization methods. For instance they have to choose between the straight-line and accelerated depreciation method or the FIFO and LIFO or the weighted-average inventory valuation method that have different results on net income. These methods affect the net income in the short term period, nevertheless. In the long run the effect on net income is the same with all accounting policies. Apart from that, managers can choose to make or defer expenditures such as research and development in that way also there is an impact on net income. Finally, given the fact that numerous researches have conducted in the field of earnings management, according to Ayres (1994), Bruns Jr & Merchant (2005) and Francis (2001) the main means that managers can use so as to manipulate earnings can be classified into four categories:

i. Discretionary accruals and liabilities estimation
ii. Recognition of revenues
iii. Generous reserve accounting and excessive provisions
iv. Intentional minor breaches of financial reporting requirements that aggregate to a material breach.

2.2. Earnings Quality

Sometimes, users of financial reports confuse earnings management with earnings quality and they believe that earnings management destroys the quality of earnings. However, this concept is not always valid. Prior researches have shown that earnings management can be good for firms and investors in some cases, such as in order to avoid violating covenants and high punishment (Dechow, Sloan & Sweeney, 1996). Apart from that, Subramanyam (1996) have stated that "earnings management can be used as a measure to communicate inside information to outside users, if market is efficient enough". On the other hand, the quality of earnings may be destroyed by earnings management on the occasion of excessive earnings management. In essence on the occasion of which managers do not care about firm's performance. Another significant point is that, earnings management is only a small part of earnings quality. In more details, earnings quality is influenced by the characteristics of firm, financial reporting system, corporate governance and control, external auditors, financing sources and others. Last but not least, the quality of earnings is deemed with reference to the quality of information which provided in financial report. Specifically, in accordance with Dechow et al. (2010) if financial reports provide relevant and useful information to specific decision makers, the financial reports have high earnings quality.

2.3. Earnings Management Vs Financial Reporting Fraud

In general, managers can engage in earnings management through earnings manipulation or through fraudulent reporting. The main discrepancy between two these ways is that earnings management can be employed without violating the Generally Acceptable Accounting Principles. On the other side of the coin, fraud in financial reports occurs when Generally Acceptable Accounting Principles are not be applied by firms. According to Jones (2011), financial reporting fraud is an action which infringes the acceptable accounting framework which has been established by standard setters. More precisely, in accordance with Beasly (2000, p. 18) fraud is related to incorrect revenue recognition or recording of assets. Apart from that, Beasly provide evidence which indicates that more than 80% of the firms have a CEO and CFO who were both involved in the fraud (Beasly, 2000. p.15). He, also, states that firms that participate in fraudulent reporting usually have no audit committee or their substance is weak (Beasly, 2000, p.19). Rezaee has ended up to the same conclusion in his study. Particularly, he has concluded that weak function corporate governance is an important factor for fraudulent reporting (Rezaee, 2002, p.58). Moreover, the study of Beasly has indicated that fraudulent reporting occurs when directors lack of appropriate experience in the field of accounting. In addition, he states that firms that engage in fraudulent reporting, usually, belong in the industry of computer hardware, computer software, health care and financial activities (Beasly, 2000, p.20).

Last but not least, studies of Rezaee and Beasly confirm that firms commit fraudulent reporting with the view to meet earnings forecast by the pressure of the stock market or when they have net losses or they are in the break-even point.

2.4. Types of Earnings Management

In accordance with Sloan (1996, p.6) earnings are consist of two components, cash flows from operations and accruals. In light of this fact, firms have the capacity to manage earnings by manipulating total accruals or by manipulating net cash flows and, respectively, firms employ accrual based earnings management or real based earnings management. It is worth to be mentioned that, standard setters introduce accruals in Generally Accepted Accounting Principles so as to deal with the problem which be immerged from the nature of cash flows. In particular, cash flows are not informative for the users of financial reports due to the fact that their timing recognition in earnings is ambitious and this problem is solved by accruals. In addition, Dechow (1994) indicated that accruals have strong connection with two accounting principles, the matching and the revenue recognition principle. Revenue recognition, indicate that a firm may recognize revenue only when all risks are transferred to the buyer and it is certain the firm will collect the money from the buyer (Dechow, 1994, p.4). The matching principle indicates that the firm recognizes cash expenses in the same period as the recognition of revenues (Dechow, 1994, p.4). However, investors are not able to recognize the two components of earnings, and they perceive earnings as net operating cash flows, so firms, usually, manipulate earnings with the accrual component of earnings.

 Finally, firms have the choice to alter the accounting process so as to manage earnings, but this method, also, has some drawbacks due to the fact that managers when they alter the accounting method which they use, they have to publish it. With this way, if they manipulate firm's earnings by altering accounting methods, it is more obvious to the users of financial reports if they have a basic knowledge of accounting.

2.4.1. Accrual Earnings Management

In principle, total accruals have the primary aim to represent the true performance of a firm by reporting expenses and revenues to the period in which they are aroused. However, accrual earnings management exists when cash flows do not demonstrate the reporting earnings due to the fact that the income is freed before or after it is accept in cash. Such cases are pre-paid goods and services and credit payments.

It is worth to be mentioned that there are two types of accruals which have been distinguished, those which can be used in order managers to manipulate earnings downward or upward, discretionary accruals, and those that are not in the authority of

management to employ them as a tool of earnings management and reflect the normal activities of the firm, non-discretionary accruals (Jones, 1991). In particular, discretionary accrual is a non-obligatory expense such as an expected bonus for management that is yet to be realized but is recorded in the account books. In essence discretionary accruals show the reporting choices adopted by the management team. Discretionary accruals can, for instance, be changed by "using increasing or decreasing estimates of bad debt reserves, warranty costs, and inventory write-downs" (Fang Li et al., 2008). On the other hand, non-discretionary accrual is an obligatory expense that has yet to be realized but is already recorded in the account books such as upcoming bills and next month salaries. From the definition of non-discretionary accrual it is obvious that the level of such accruals does not maintain the same between years. For instance due to external economic conditions the salaries can be incurred declines or increases during a financial crisis or economic grow period, respectively. Moreover the level of revenues and inventories may change with the passage of years.

Accruals can, also, be classified into two others categories, current accruals and long term accruals. Adjustments to short term assets and liabilities, such as over or underestimated the provisions for bad debt, incorporate to current accruals and adjustments to long term assets and liabilities, for instance changes to the deferred taxes, report to long term accruals (Teoh, Welch, & Wong, 1998b). A great variety of prior researches (Cahan, 1992; Gopalan & Jayaraman, 2012; Guenther, 1994) focus on current accruals due to the fact that these accruals can be controlled more easily than long term accruals by managers.

However, it is worth to be mentioned that the employ of accrual based earnings management can be limited for several reasons. To begin with, if accounting standards become more strictly, managers have to be more careful when they manipulate earnings by using accruals. All the same, Ewert & Wagenhofer (2005) mention that managers if they have to deal with tightening accounting standards they may have more incentives to engage in earnings management due to the fact that the value of employing earnings management techniques will be more high. Moreover, accrual based earnings management can be limited if investors, shareholders and regulators become more suspicious when they asses financial statements of firms and deem them in a more strict way (Cohen, Dey, & Lys, 2008). Something, relevance occurred in US after the passing of Sarbanes-Oxley Act in 2002. More precisely, after the Sarbanes-Oxley Act the use of accrual earnings management by firms with the view to manipulate earnings was limited and they turn their attention to real based earnings management. Finally, Zang (2012), refer that the employment of accrual based earnings management can be limited by firms given the fact that firms which have engage in these type of earnings management in the past they are not able to employ further earnings management through accruals within the acceptable framework of accounting standards.

2.4.2. Real Earnings Management

It is an undeniable fact that after the passing of the Sarbanes-Oxley Act, the scrutiny of financial statements by regulators and other stakeholders was increased. Consequently, managers shifted their focus of accrual earnings management to real earnings management.

In accordance with Gunny (2010) real earnings management occurs when managers "change the timing or structuring of an operation, investment, and/or financing transaction in an effort to influence the output of the accounting system" (Gunny, 2010, p. 855).

Several studies have examined the methods of employing real earnings management. In particular, Xu, R. Z., G. K. Taylor, & M. T. Dugan (2007) indicate that managers are capable of managing earnings by manipulating several operating, investing and financial activities.

A year later Daniel A. Cohen and Paul Zarowin (2008) lead to the conclusion that real earnings management can be employed by following three manipulation methods. Namely, they stated the following ways:

  i. Increasing total sales by providing discounts or by making credit terms more lenient
 ii. Recording lower cost of goods per unit by increasing production
iii. Decreasing discretionary expenses (e.g. advertising, research and development (R&D),and Selling, General and Administrative (SG&A) expenses)

As stated above, firms can employ real earnings management by manipulating operating, investing and financial activities (Xu et al., 2007). In essence, real earnings management activities can be separated into two categories, real earnings management via adjustment of operating and investment activities and real earnings management via adjustment of financing activities.

2.4.2.1. Adjustment of operating and investment activities

This category includes the manipulation of discretionary expenses, inventory, production and sales. With the term of discretionary expenses I mean those expenses, such as research and development (R&D)and selling general and administrative (SG&A) expenses, that are usually used to manage reporting earnings upward or downward. Managers can easily adjust discretionary expenses in order to avoid reporting losses, to meet analysts' expectations and to smooth earnings. Apart from that, managers according to Roychowdhury (2006) have the choice to increase the production in order to reduce the cost of goods sold per product. Jackson & Wilcox

(2006) also assert that managers can provide discounts to increase the level of sales. Finally, McKee (2005) mention that "unrealized gains or losses will be recorded when long-term assets are sold before the end of their useful life".

2.4.2.2. Adjustment of financing activities

This category includes activities such as repurchasing outstanding stocks, granting stocks options and employing financial instruments. In essence, in accordance with Xu et al.(2007) managers have the capacity to use a part of earnings in order to purchase a number of outstanding shares with the aim to increase current and future earnings per share. Simultaneously, Bens et al,.(2003) in their research declare that another reason for managers to repurchase stocks is in order to avoid the dilution of earnings per share. Xu et al.(2007), also, declare that another way to inflate earnings is by using granting of stocks options. Namely, they stated that "granting of stocks options at or above the current market value provide less costly alternative to cash and stock compensation and is therefore used to increase earnings". They, finally, affirm that the changes of interest rates, commodity prices and foreign exchange rates affect the volatility of operating cash flows and earnings in a positive way, that is to say that the increase of these factor have as a result the increase of operating cash flows and earnings. These consequences can be easily hedged by using financial derivatives with accrual earnings management.

2.4.3. Changes to the Accounting process

Generally accepted accounting principles (GAAP) permit to managers to decide what the most suitable accounting processes are in order to report the true economic performance of their firm. However, managers can choose the accounting processes that inflate or decrease their firm's earnings in accordance with the purpose they have. In particular, managers in this category of earnings management can choose the manipulation of depreciation methods, inventory valuations methods (LIFO/FIFO adoptions or extensions), employment and pension benefits and the treatment of investment tax credits (Sweeney, 1994).

The empirical evidence whether changes to the accounting process can be used to manage earnings is mixed. Firstly, Sunder (1975) asserted that changes to the inventory valuation method of Last In, First Out (LIFO) have as a result a decrease in firm's earnings. So, if investors depend on the information which is reflected to reported earnings in order to value stocks, the decline in the price of stocks is unavoidable. Adversely, if investors depended on the economic value of the firm, a change to the LIFO method will have as a result an increase in stock prices. Sunder,

also, indicated that firms prior to the change of the LIFO method reported an abnormal increase in stock prices, something which was not been observed after the change in LIFO. In light of this fact, Sunder assumed that changes in the inventory valuation method cannot influence the stock prices. On the other hand, Sunder asserted that the change in this accounting method enhance the performance of the firm and, hence, influence the stock prices.

Ricks in his study which conducted in 1982 found that firms change the inventory valuation method of LIFO in order to report lower earnings and inventory amounts. This evidence can be connected with the result of the study of Hughes & Schwartz (1998) who indicated that a change in LIFO method can contribute to tax savings for a firm given the fact that the reported earnings in which taxes are estimated have decreased.

Nevertheless, changes to the accounting processes are not widely used as earnings management method. First of all, in accordance with Healy (1985, p. 103) changes in accounting processes "reflect purely discretionary accounting procedure decisions" in contrast with accruals which are divided into discretionary and non-discretionary accruals. Namely, changes in accounting processes are more obvious to stakeholders and can be easily noticed through financial reports. On the other hand, discretionary accruals that managers use to manipulate earnings are not easily observable to financial reports. Moreover, given the fact that it is impossible to change accounting processes every year, it is easier to use accruals to manage earnings (Healy, 1985). Finally, auditors and board directors usually monitor the changes to accounting processes easier than changes to total accruals, so it is difficult for managers to manage earnings through changes to accounting processes and, as a result, they choose to employ accrual-based earnings management or real-based earnings management (Matsumoto, 2002).

2.4.4. Choosing between Earnings Management Types

In actual accounting settings, managers may use several types of earnings management in the same time. For instance, managers may employ accrual-based earnings management in combination with changes to the accounting processes. Furthermore, managers can employ only one type of earnings management but use different methods that belong to this type. For example, managers are able to change from a FIFO to LIFO inventory valuation method and, simultaneously, change the depreciation method in order to manipulate earnings.

Concerning with accrual earnings management and real earnings management there are two significant discrepancies. First of all, Roychowdhury (2006) refer that real earnings management influences in the more directly way cash flows that accruals earnings management. Second, managers in order to manipulate earnings through real

activities have to decide it early in the financial year in contrast with manipulation through accruals in which the decision can be made during financial year and little earlier to the event in which they have the desire to perfume manipulated earnings.

A great variety of prior researches represent several reasons why managers may choose real based earnings management instead of accrual based earnings management. Firstly, Gunny (2010) declares that it is easier for auditors to detect accruals earnings management than real earnings management. Apart from that, she mentions that managers have more authority on operational decisions which are involved in real based earnings management than in accruals which are involved in accounting decisions and consequently auditors are able to detect manipulation in this field by a carefully examination in financial reports. Moreover, if firms have engaged in accruals earnings management to a great degree in past, it is difficult to use this method again in order to inflate or decrease earnings (Gunny, 2010). Finally, in accordance with Burns & Merchant (1990) managers deem that the manipulation of earnings through real activities is more ethical than through accruals due to the fact that real activities management show what exactly occurs in the firm and as a result reflect approximately the real performance of the firm.

Other studies have shown that managers who employ real earnings management techniques rather than accruals earnings management techniques concentrate to a greater extent on short term performance indicators such as earnings and earnings per share despite the fact that long term performance may affected adversely.

Cohen and Zarowin (2010) in their study indicate that firms usually manipulate their earning through real activities when they desire to report lower earnings. Apart from that, they mention that if the motivation of earnings management is to meet earnings expectations and forecasts both accrual earnings management and real earnings management can be employed.

In the cases in which, managers engage in earnings management with the view to maintain the overvalued price, aggressive methods are used. In essence, firms, firstly, manage accruals to manipulate earnings, and then   they use real activities management and finally apply methods that are not admissible from the generally accepted accounting principles with the view to sustain an overvalued stock price (Badertscher, 2011).

Last, but not least, what method of earnings management firms will choose depend only on the relative cost of employing accruals earnings management or real earnings management. In essence, according to Zang (2012) if the cost of employing accrual earnings management is relatively less in comparison with real earnings management, firms will follow the techniques of accrual earnings management.

Finally, it is worth to be mentioned that earnings management methods either accrual based earnings management or real earnings management are also used in order firms smooth earnings. Firms have the desire to smooth earnings so as to decrease earnings

variability and therefore to represent a better performance of their firm with the aim to obtain and maintain low financing cost. If firms report high variability of earnings this equals to the fact that that firms have undertake a great risk in their investment decisions and as a result, the financing is not easy due to the fact that bankers provide higher interest loans in order to hedge the risk of default.

2.5. Incentives for Earnings Management

Prior studies have shown that earnings are a significant accounting number due to the fact that earnings can be used as successfully indicator of firm's performance both in stable environments and in dynamic environments in which cash flows are not so reliable measure of firm's performance as earnings are (Dechow, 1994). Additionally, other studies have indicated that earnings predict to a strong degree the value of firm (Collins, Maydew, & Weiss, 1997). Last, but not least, Watts & Zimmerman (1986) in their study refer that earnings not only reflect factors that influence stock prices but also, earnings are able to alter the stock prices. So, it is obvious that earnings are an important accounting number on which users of financial reports and decision makers are dependent. As a result, managers shift their attention to manage earnings with the view to attain their objective set.

Several studies have been conducted during the last few years that exhibit and clarify the motives that lead managers to engage in earnings management activities.

In particular, Healy and Wahlen (1999) claim and indicate that the incentives of manipulating earnings can be classified into three categories:

    i.   Capital market expectation and valuation
    ii.   Contracts written in terms of accounting numbers, and
    iii.   Antitrust or other government regulation.

Simultaneously the same year Degeorge et al. (1999) carried out their research in order to identify the motives that lead managers to employ accounting tools with the view to manage earnings upward or downward and they end up that there are three main reasons by which managers manipulate earnings. These reasons are (Degeorge et al., 1999, p.8):

    i.   To report positive profits, that is, report earnings that are above zero
    ii.   To maintain recent performance, that is, make at last year's earnings and
    iii.   To meet analysts' expectations, particularly the analysts' consensus earnings forecast.

Apart from that, prior study of Dechow et al. (1995) has shown that the motives of earnings manipulation can be the following:

i. Personal considerations
ii. Contractual motives
iii. Competitive considerations
iv. Corporate control contests
v. Capital market motives
vi. Political cost motives, and
vii. Stakeholder considerations

In essence all researches have concluded to the same incentives with the only difference being the categories to which these incentives belong.

Recent study of Gonchsrov (2005) classified the incentives that report in the research of Dechow et al. into two categories. Namely, the categories that Gonchsrov recognizes are: motives that make shareholders the winnings party (contractual motivations, capital market motivations, and regulatory motivations) and motives that make managers the winning party (contractual motivations, behavioral motivations, and capital market motivations.

2.5.1. Shareholders as a winning party

Evidence of prior studies has indicated that earnings management may occur in order managers to influence short-term stock price performance. This makes sense due to the fact that investors take into consideration the stock price performances with the view to decide whether or not to be involved in an investment action. Apart from that, the manipulation of earnings in accordance with Healy and Wahlen (1999) may aim to mislead investors' opinion. It is widely accepted that investors use to a greater degree financial statements and specially earnings figures which are derived from or be included in these statements with the view to acquire critical information and a deep insight of firm's performance in order to make a financial decision.

This is consistent with Dye (1988) and Trueman and Titman (1988) who demonstrate examples of contracting frictions that can lead to earnings management intended to influence the decisions of external capital providers.

Other studies of earnings management have indicated that earnings are manipulated to meet the expectations of financial analysts or management. For instance, Burgstahler and Eames (1998) prove that firms manage earnings to meet analysts' forecasts. Burgstahler and Eames (1998), namely, find that managers inflate earnings to avoid reporting lower than analysts' expectations. Kasznik (1999), indicate also that firms that are in danger of falling short off a management earnings forecast use unexpected accruals to increase their earnings. Apart from that, Abarbanell and Lehavy (1998) indicate that firms that receive buy recommendations are more likely to manipulate earnings to meet analysts' forecast. In order to predict the direction of earnings

management, they use financial analysts' stock recommendations. Degeorge, Patel, & Zeckhauser (1999) illustrate earnings management as artificial earnings manipulation by managers to reach the expected level of profit for some special decisions like effects on analysts' forecasts or estimation of previous earning trends. On the other hand, Burgstahler & Dichev (1997) examined the theory of opportunistic earnings management and the evidence, they found, illustrated that firms have more motivations to escape from loss and reduction in profits.

Another significant point which is mentioned in the literature of Gonharov (2005) and is related with the contractual motives is the granting of loans. In general, firms may engage in earnings management prior requiring for a loan providing. Namely, firms manage earnings upward so as to achieve favorable terms. However, the incentives of manipulating earnings exist and after the granting of loan in order firms avoid technical default. This is consistent with the evidence which is provided by the research of Watts and Zimmerman (1978) who asses that debt covenants provide substantial motives to firm employ earnings management activities.

Finally, the regulatory motives can be explained with the aid of "political cost hypothesis" which is provided by the study of Watts and Zimmerman (1978&1979). Namely, Watts and Zimmerman (1978, p.115) declare that "the political sector has the power to effect wealth transfers between various groups" and as a result firms may employ accounting tools with the view to decrease the possibility of wealth transfers to other parties. For instance, managers may decide to manage earnings downward in order to minimize taxes that they have to pay.

2.5.2. Managers as a winning party

One reason of emerging earnings management, which involved in capital market motives, is the increasing corporate mangers' compensation and the job security. In essence, management compensation has close connection with performance indicators such as firm value and share price. These performance indicators are usually related with bonus payment. In particular, bonus payment increases when short term performance also increases. As a result, managers focus on short term periods and, sometimes, ignore the effects of their decisions on the long-term performance. Apart from that, another research of Healy (1985) has specified that managers when anticipate bonus which is not money they have strong motive to manipulate earnings downward. Healy also reports that if earnings predicted targets are connected with bonus payments, managers have the tendency to manage earnings. Namely, managers manipulate earnings upward or downward in order to meet upper or lower bounds of predictions.

Moreover, a variety of studies have indicated that managers tent to manipulate earnings prior to equity offers (Teoh, Welch, and Wong 1998b; Shivakumar 2000),

stock financed acquisitions (Erickson and Wang 1998) and initially public offers (Teoh, Welch, and Wong 1998a; Wong and Rao 1998). In particular, the findings indicate that firms report positive unexpected accruals prior to these transactions. Namely firms have used acceptable accounting tools in order to increase their earnings before these transactions. Furthermore, according to DeAngelo (1986) and Perry & Williams (1994) managers have strong incentives to employ earnings management techniques in management buyouts so as to decrease earnings with the view to beat lower price.

Last, but not least, Wells (2002) indicate that new CEOs have the tendency to report lower total earnings during the first months and later they manage earnings upward in order to indicate improvement of performance, especially when bonus payments have strong connection with performance indicators.

2.6. Firms which engage in Earnings Management

Other studies have focused on what firms indulge in earnings management. In particular, Michelson, Jordan-Wagner & Wootton (1995) in their study find that the firms that manipulate earnings are the large firms with less risk and return. Chaney & Lewis (1995) in their research examined the effect of firm's size, profit, return, debt, discretionary accruals and growth on earning management and indicate that the smoothing maker firms are bigger than other in size, debt, returns and discretionary accruals. These results indicate also that the weak performance firms do less earnings management. Moreover, Burgstahler and Dichev (1997) in their study, based on contracting theory indicate that firms with small losses engage in earnings manipulation in order to report small profit. Finally, Dechow et al. (2003), dependent on the study of Burgstahler and Dichev (1997), stated that firms with large losses do not engage in earnings manipulation with the view to report small losses.

2.7. Measuring Earnings Management

As was noted earlier, there are two main ways firms to manipulate their earnings, through real activities and through accrual- based techniques. Prior researches have indicated that management employs accrual-based earnings management on a frequent basis rather than real earnings management with the view to manipulate earnings, due to the fact that accruals are easier to be controlled (Dechow et al., 1995). Apart from that, when management employs real earnings management techniques focus on short term performance and be unconcerned about the future performance of the firm in a long term. Furthermore, Peasnell (1998) in his study about "earnings management using asset sales" refers that manipulation of earnings

through accruals is more cost efficient in comparison with the adjustment of operating, investment and financial activities. Another beneficial point of accrual-based earnings management is the fact that accruals are more difficult to be measure, especially discretionary accruals which manipulated by managers in order to adjust earnings in their desirable/target level and, consequently, it is more rare someone to detect earnings management by employing accruals in comparison with the alter of accounting procedures and highly visible transactions that are more likely to undo earnings management (Young, 1999). Last, but not least, employing accruals earnings management decreases the problem of measuring the value of different accounting choices for instance the choice between the inventory methods such as FIFO and LIFO method.

Concerning all stated above, this study will focus on earnings management through accruals.

2.7.1. Total Accrual Management Models

Prior academic studies and accounting theory, in general, have established that total accruals are composed of discretionary accruals and non discretionary accruals. In accordance with Jones (1991), non discretionary accruals are stem from factors that are difficult to be controlled and managed by managers in comparison with discretionary accruals that are under the control of managers and can be managed easier in the direction they desire. So, discretionary accruals frequently used as a proxy for accruals earnings management. Nevertheless, the evaluation of discretionary accruals is not an easy task and as a result most prior studies have established models that use non-discretionary accruals in order to estimate discretionary accruals. In some models, there is the hypothesis that non-discretionary accruals are constant, consequently these models named as "stationary discretionary accrual models" (e.g. Healy model, 1985; DeAngelo model, 1986; Industry model (Dechow & Sloan, 1991); and the Components model (Thomas & Zang, 2000). In the other side of the coin, there are the "performance-based discretionary accruals models" in which this hypothesis of constant non-discretionary accruals is rejected (e.g. original Jones model,1991; modified Jones model (Dechow et al., 1995); Cash flow Jones model (Dechow, 1994); Margin model (Peasnell et al., 2000); and the performance matched model (Kothari et al., 2005). In essence, these models take into account that non discretionary accruals are influenced by external factors such as macroeconomic conditions (financial crisis) and as a result are impossible to be maintained constant.

Some of "performance-based discretionary accruals models" and "stationary discretionary accrual models" will be illustrated bellow.

2.7.1.1. The Healy Model (1985)

Healy model (1985) is the first model which emerges in the field of earnings management. In his research, Healy check the hypothesis that managers who receive bonus schemes depended on the firm's performance would have the desire to increase the bonus schemes and, as a result, they try to manipulate earnings by employing earnings management techniques. In essence, he considers that nondiscretionary accruals are used to estimate total accruals scaled by lagged total assets from estimated period due to the fact that systematic discretionary accruals exist in every period. Healy with the view to test the hypothesis of his study breaks down his sample into three groups. The first group includes earnings that are manipulated upward and the others two groups contain earnings that are manipulated downward. Then, he estimates mean total accruals of each groups and he compare the results. He states that the mean total accruals represent the nondiscretionary accruals in the estimation period.

The equation he conducted in his study is the following:

$$NDA_{i,t} = \frac{\sum_t TA_{i,t}}{T}$$

Where:

$NDA_{i,t}$ = non-discretionary accruals in year t for firm i.

$TA_{i,t}$ = scaled total accruals by previous year total assets for firm i.

T: the number of year in the estimation period.

However, this model is considered very simple and it is deemed inadequate in estimating discretionary accruals (Young, 1999).

2.7.1.2. The DeAngelo Model (1986)

The DeAngelo model recommends an improvement of the Healy model given the estimation period which is used in his model. In essence, DeAngelo examine in contrast total accruals of the previous year with current total accruals and asses that any difference in his results is an outcome of changes in discretionary accruals. So, the estimation period of this model is only one year and particular the previous year's observations of total accruals.

The DeAngelo model for non-discretionary accruals is:

$$NDA_{i,t} = TA_{i,t-1}$$

Where:

$NDA_{i,t}$= non-discretionary accruals in year t for firm i.

$TA_{i,t-1}$= scaled total accruals by previous year for firm i.

However, both Healy model and DeAngelo model assumes that nondiscretionary accruals are constant over time, something which lead to non-successful outcomes of detecting earning management due to the fact that nondiscretionary accruals changes because of changes in economic environment (Kaplan, 1985). So, other models are following that take into consideration the findings of Kaplan.

2.7.1.3. The Jones Model (1991)

It is an undeniable fact that the Jones Model (1991) is the most applied model in the field of detecting earnings management.

This model derived by her study which conducted in 1991 in her effort to detect whether firms manipulate their earnings with the view to benefit of import support. Jones found evidence which indicates that the executives of the firms manage earnings downward through discretionary accruals, especially in the auditing periods of the United States International Trade Commission (USITC) in order to obtain favorable tariffs.

Jones in her study rejected the hypothesis of Healy and DeAngelo model that non-discretionary accruals remain constant. She accepted the evidence which provided by the study of Kaplan (1985) that non-discretionary accruals are impossible to be constant during a long period due to the fact that they are influenced by external factors, such as economic circumstances and organic growth of the firm, that are not feasible to be controlled by managers.

Moreover, she noted that total accrual is the change in non-cash working capital less income tax payable and total depreciation expense so that total accruals includes accounts receivable, accounts payable and changes in inventory. Apart from that, in her study, she perceived total accruals as the sum of non-discretionary accruals and discretionary accruals. She indicated that discretionary accruals are easily to be controlled by managers and, hence, discretionary accruals are used as a proxy of earnings management. She emphasized, also, the fact that sales determine working capital and investment in property, plant and equipment determine depreciation and amortization and she deemed that revenues and these investments in long-term assets are nondiscretionary and so changes in these accruals should be used to control the change in non-discretionary accruals caused by the changes in economic environment.

In essence, the equation which provided for estimating non-discretionary accruals by her study is the following:

$$NDA_{i,t} = a_1 * \frac{1}{A_{i,t-1}} + a_2 * DREV_{i,t} + a_3 * PPE_{i,t}$$

Where:

$NDA_{i,t}$= non-discretionary accruals in year t for firm i.

$A_{i,t-1}$=total assets in year t-1 for firm i.

$DREV_t$ =revenues in the year t less revenues in the year t-1 for firm i scaled by total assets ($A_{i,t-1}$).

PPE_t =gross property, plant and equipment in the year t for firm i scaled by total assets ($A_{i,t-1}$).

a_1, a_2, a_3 =firm specific coefficients.

In order to estimate the firm specific coefficients, she used another equation, in the same estimated period, of total accruals.

$$TA_{i,t} = a_1 * \frac{1}{A_{i,t-1}} ++ a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_t$$

Where a_1, a_2, a_3 denote the Ordinary Least Squares (OLS) estimates of a_1, a_2, a_3 and $TA_{i,t}$ is total accruals in year t for firm i.

The above model is a linear regression model in which NDA and TA are easy to be obtained by financial reports. Apart from that, he used time series data in order to estimate discretionary accruals.

Given the assumption that total accruals are consist of non-discretionary accruals and discretionary accruals ($DA_t = TA_t - NDA_t$) the residuals of the equation of total accruals are the discretionary accruals that managers control so as to manage earnings. If the value of discretionary accruals is positive then the managers have manipulated earnings upward and if it is negative they manage earnings downward.

Despite the fact that this model successfully explains the variation in total accruals around a quarter, there are limitations in the model. First of all, Jones assumes that sales and, consequently, revenues are nondiscretionary but some studies have indicated that managers are able to manage revenues by offering for instance discounts to increase sales. So, if managers do manage revenues, the Jones model will not be able to detect it. In particular, the study of Ronen and Yaari (2008) proved that the Jones model, despite the fact that effectively reflects the manipulation of bad debts expense, underestimates discretionary accruals when managers have manipulated the

revenues. Apart from that, the same study have indicated that the Jones model suffers from simultaneity problem due to the fact that change in revenue and gross PPE are contained both in non-discretionary accruals and in total accruals and, as a result, accounts receivable that contained within revenues and total accruals is both regressor and regressand. Another shortcoming of this model is that it suffers from heteroskedasticity in spite of the fact that all variables are divided by lagged total assets with the view to eliminate this problem (Kothari et al., 2005). Last, but not least, Sweeney (1994) in his study declare that the majority of models that use discretionary accruals in order to detect earnings management, such as the Jones model, deal with issues with negative serial correlation. He noted, also that the distinction between discretionary accruals and non-discretionary accruals that are influenced by economic circumstances is difficult. Finally he declares that in these models certain changes like LIFO liquidations may be misclassified.

However, the Jones model has lower standard error in comparison with the Healy model, DeAngelo model and the industry model.

2.7.1.4. The modified Jones Model (1995)

Dechow et al. (1995) modified the Jones model in order to counteract some of the drawbacks that it has. Namely, they take into account that managers are capable of manipulating revenues by offering credit in sales and, hence, they recommend that the most effectively way to estimate non-discretionary accruals is by using change in accounts receivable in order to justify changes in revenue due to manipulation. In essence, this model now focuses on sales on credits that are influenced more easily than the cash sales. With this way, Dechow et al. manage to reduce the measurement error of discretionary accruals and to provide a more powerful test of detecting earnings management.

The Dechow et al (1995) model is specified in the following equation:

$$NDA_{i,t} = a_1 * \frac{1}{A_{i,t-1}} + a_2 * (DREV_{i,t} - DREC_{i,t}) + a_3 * PPE_{i,t}$$

Where:

$DREC_{i,t}$= receivables in the year t less receivables in year t-1 for firm i scaled by total assets ($A_{i,t-1}$).

It is worth to be mentioned that a_1, a_2, a_3 are obtained by the original Jones model and not by the modified model.

2.7.1.5. Industry Model (1991)

This model proposed by Dechow and Sloan (1991) and relaxes the assumption which employed in the Healy model and in the DeAngelo model that non-discretionary accruals are constant. This model is similar to the Jones model and the equation which provide for estimating non-discretionary accruals is the following:

$$NDA_{i,t} = \gamma_1 + \gamma_2 * median_1(TA_{i,t})$$

Where:

$median_1(TA_{i,t})$=the median value of total accruals scaled by lagged assets for all non-sample firms in the same 2-digit standard classification code

γ_1, γ_2=firm specific parameters that are estimated by using OLS on the observations in the estimation period.

Dechow and Sloan (1991), in their study, adopt the assumption that firms that belong in the same industry have and the same distribution of non-discretionary accruals.

However, this model reflects only the change in non-discretionary accruals that are common for the firms in the same industry. So this model may not effectively extract discretionary accruals from non-discretionary accruals if the changes in non-discretionary accruals derive from changes in firm-specific environment. Finally, the degree of correlation between the model and specific firm is difficult to be controlled due to the combination on non-discretionary accruals of the firms.

2.7.1.6. The Beneish Model (1997)

Beneish in his study modifies the Jones model to a greater extent in order to deal with the problem of inadequate estimation of discretionary accruals when incentives of earnings management associated with performance. To counteract this problem Beneish add to the modified Jones model total lagged accruals and prior stock performance. The model which Beneish exhibits is the following:

$$NDA_{i,t} = a_1 * \frac{1}{A_{i,t-1}} + a_2 * \left(DREV_{i,t} - DREC_{i,t}\right) + a_3 * PPE_{i,t} + a_4 * TA_{i,t-1} + a_5 * P_{i,t}$$

Where:

$TA_{i,t-1}$= lagged total accruals of firm i.

$P_{i,t}$= prior stock performance of firm i.

With this model the detection of earnings management over multiple years is more easy and accurate. This model is very useful when managers have incentives to overstate the value of the firm by increasing the earnings.

2.7.1.7. The Cash Flow Jones Model (1996)

Shivakumar (1996) asses the evidence which is received by the study of Dechow (1996) which indicates that there is strong negative correlation between accruals and cash flow from operation. Given that, Shivakumar considers that operating cash flow has to be contained as a control variable in non-discretionary accruals in order to evaluate whether firms with extreme cash flows engage in earnings management. So, the adjustment he makes in the original Jones model is the following:

$$NDA_{i,t} = a_1 * \frac{1}{A_{i,t-1}} + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + a_4 * CFO_{i,t}$$

Where

$CFO_{i,t}$= operating cash flow of firm i in the year t.

2.7.1.8. The McNichols Model (2002)

McNichol attempts to combine the Jones model and the model of Dechow and Dichev into one model with the view to establish a strong model which will reduce the omitted variable problem in the Jones model. Namely, Jones in his model made an effort to separate non-discretionary accruals from discretionary accrual. On the other hand, Dechow and Dichev model in their model examine accruals in total by focusing on workings capital accruals and operating cash flows. In essence, McNichol incorporates prior current and future cash flows in the original Jones model in light of the fact that earnings growth is an important correlated factor which is omitted in this model. The model which provided by McNichol is the following:

$$\Delta WC_{i,t} = \beta_0 + \beta_1 * \Delta REV_{i,t} + \beta_2 * PPE_{i,t} + \beta_3 * CFO_{i,t-1} + \beta_4 * CFO_{i,t} + \beta_5 * CFO_{i,t+1} + \varepsilon_{i,t}$$

Where:

$\Delta WC_{i,t}$ =change in working capital in the year t for firm i.

$CFO_{i,t-1}$=cash flow from operation in the year t-1 for firm i scaled by total assets ($A_{i,t-1}$).

$CFO_{i,t}$= cash flow from operation in the year t for firm i scaled by total assets ($A_{i,t-1}$).

$CFO_{i,t+1}$= cash flow from operation in the year t+1 for firm i scaled by total assets ($A_{i,t-1}$).

$\varepsilon_{i,t}$=error term in the year t for the firm i.

$A_{i,t-1}$=total assets in year t-1 for firm i.

$DREV_t$ =revenues in the year t less revenues in the year t-1 for firm i scaled by total assets ($A_{i,t-1}$).

PPE_t =Gross property, plant and equipment in the year t for firm i scaled by total assets ($A_{i,t-1}$).

2.7.1.9. The Forward Looking Model (2003)

Dechow et al. (2003) made three modifications in the original Jones model in order to improve the explanatory power of this model. First of all, Dechow et al. in their study try to deal with the problem of distinction between discretionary credit sales and non-discretionary, which had arisen from the Jones model. Namely, they first predict the normal part of change in receivables and, then, they use it in order to evaluate non-discretionary accruals. This is attained by using the following equation:

$$\Delta REC_{i,t} = a_1 + k * \Delta REV_{i,t} + \varepsilon_{i,t}$$

Where:

$DREC_{i,t}$= receivables in the year t less receivables in year t-1 for firm i scaled by total assets ($A_{i,t-1}$).

$DREV_t$ =revenues in the year t less revenues in the year t-1 for firm i scaled by total assets ($A_{i,t-1}$).

$\varepsilon_{i,t}$=error term in the year t for the firm i.

k= expected change in accounts receivable for a given change in sales.

By using k, they manage to separate unexpected change in credit sales which is part of discretionary accruals from the expected change which belong to non-discretionary accruals.

Apart from that, they add two additional variables in the original Jones model. The first variable is the lagged total accrual which is used with the view to control for persistent accruals. The second variable, they add, is the future sales growth in order to justify the consequences of future sales growth on working capital accruals levels. So, the final model which exhibit to estimate non-discretionary accruals is the following:

$$NDA_{i,t} = a_1 * \frac{1}{A_{i,t-1}} + a_2 * ((1+k)(DREV_{i,t} - DREC_{i,t}) + a_3 * PPE_{i,t} + a_4 TA_{i,t-1} + a_5 Gr\_Sales_{i,t}$$

Where:

k= expected change in accounts receivable for a given change in sales.

$TA_{i,t-1}$= lagged total accruals of firm i.

$Gr\_Sales_{i,t}$=change in sales from current to next year for firm i scales by current sales.

2.8. Definition of Mergers & Acquisitions

Before the review of earnings management by firms involved in Mergers and Acquisitions (M&As), it takes priority to determine the meaning of these two terms. On the whole, the terms Mergers and Acquisitions are often confused or used as though they were synonymous, despite the fact that these terms have slightly different meaning. A merger or an acquisition can be defined as the combination of two or more companies into one new company or corporation. The main difference between a merger and an acquisition lies in the way in which the combination of the two companies is accomplished and it is announced.

In more detail, merger is a deal in which two existing companies agree to combine their activities and form a newly named company. This kind of deal is usually referred as a "merger of equals". Apart from that, a merger can be, also, a purchase deal in which both CEOs agree that joining together is in the best interest of their companies. It is worth to be mentioned that in a merger, both companies' stocks are surrendered and new company stock is issued. Least but not last, merger is a friendly deal in which both target and acquiring firms agree to combine their activities. If this deal has hostile characteristics, it does not belong to the category of mergers and it is part of acquisitions. In essence, acquisition is an action in which the acquiring company buys most, if not all, of the target company's ownership stakes to gain control of the target

firm. After the acquisition, the target firm ceases to exist and only the acquiring firm's stock continues to be traded.

It is worth mentioning that firms have a great variety of incentives to engage in mergers and acquisitions. In precisely, mergers and acquisitions are commonly employed by firms with the view to increase their reach, to expand their procedures into new segments and in order to gain market share. All of these are done in the best interest of shareholders and in order to create more value to them. In essence, the concept behind buying a company is to create shareholder value over and above that of the sum of the two companies. Two companies together are more valuable than two separate companies that is the reasoning behind M&A.

Moreover, a variety of different categories of mergers exists. These categories are based on the kind of the relationship which prevails between the two merged companies and on the way in which the finance of merger is completed. To begin with, in light of the relationship between the two companies that are merging there is the horizontal merger, the vertical merger, the market-extension merger, the product-extension merger and the conglomeration merger. In greater detail, in horizontal merger the two companies that are combined are in direct competition and share the same product lines and markets. In vertical merger, a customer and company or a supplier and company are combined. In the Market-extension merger, participates two companies that sells the same products in different markets. Moreover, a merger can be conducted between two companies that selling different but related products in the same market. This type of merger is the Product-extension merger. Finally, there is the Conglomeration in which the two companies that merged have no common business areas.

On the other hand, given the way by which the merger is financed, there is the purchase merger and the consolidation merger. In purchase merger, the transaction is made with cash or through the issue of some kind of debt instrument. Acquiring companies often prefer this type of merger because it can provide them with a tax benefit. Acquired assets can be written-up to the actual purchase price, and the difference between the book value and the purchase price of the assets can be depreciated annually, reducing taxes payable by the acquiring company. Finally in consolidation merger, a brand new company is formed and both companies are bought and combined under the new entity. The tax terms are the same as those of a purchase merger.

Last but not least, another type of merger which distinguished is the "reverse merger". Reverse merger is a deal that enables a private company to get publicly-listed in a relatively short time period. A reverse merger occurs when a private company that has strong prospects and is eager to raise financing buys a publicly-listed shell company, usually one with no business and limited assets. The private company reverse merges into the public company, and together they become an entirely new public corporation with tradable shares.

In conclusion, regardless of the different types of mergers and acquisitions that exist, the common goal of these deals is to increase the value of the firm which continues to operate after this event.

2.9. Mergers and Acquisitions and the Earnings Management Hypothesis

As demonstrated by Dechow et al. (1996) and Jimbalvo (1996) external financing events provide a setting in which management has strong incentives to manipulate earnings. This consideration may assist in illustrating the relationship between Earnings Management and the merger and acquisitions deals.

As noted above, mergers and acquisitions are a combination of two or more companies into one new company. In corporate mergers and acquisitions the acquiring firm buys the target's stock or assets for cash or exchanges its stock with target shareholders. So there are two categories of mergers and acquisitions, the stock financed corporate mergers and acquisitions and the cash financed corporate mergers and acquisitions.

To begin with, in stock for stock mergers and acquisitions, the consideration received by target shareholders is the acquiring firm's stock. The total number of shares issued by the acquiring firm to gain control is determined by a negotiated exchange ratio agreed on by the acquirer and the target. This exchange ratio is determined as the numbers of shares of acquiring firm stock to be issued for a share of target stock. This exchange ratio is, also, set such that target shareholders generally receive a substantial premium above current market price. Alternative, the exchange ratio may be set depend on the acquiring firm's appraised stock value.

Given the fact that this exchange ratio appears strong connection with the acquiring firm's stock price, the acquiring firm may have incentives to increase its share price prior to the merger. Erickson and Wang (1999) noticed that there are three main reasons that illustrate why acquirer tries to increase share price pre-merger. First of all, the shareholders of the acquiring firm prefer a higher price in order to minimize the likelihood of earning dilution. Moreover, control and voting power of existing shareholders is diluted by a stock issue. Finally, acquiring firm by increasing the market price of its stock reduce the cost of buying the target.

However, the target firm has also an incentive to increase its stock price in this type of merger and acquisition so as to receive more new issued stocks of the acquiring firm. Nevertheless, it is more difficult for target firm to manipulate its earnings prior to a merger due to the fact that target firm may be unaware of this action.

In light of the fact that both the acquiring and the target firm have an incentive to manipulate earnings prior to merger and acquisition deals, they both hire expert accountants, auditors or investment bankers to evaluate the fairness of exchange ratio.

It is worth to be mentioned that despite the numerous incentives that acquiring firm has to manipulate its earnings prior to merger and acquisition deals, may choose not to engage in such actions for good reasons. Agency theory assert that for earnings management to occur, the cost of undoing earning management must exceed the cost of managing earnings (Watts and Zimmerman, 1986). Moreover, prior literature indicates that in cases in which the costs of undoing earnings management are more high, earnings management is most feasible. Such a situation is common place when the user of accounting information is naïve or unaware. However, in the case of stock financed corporate mergers and acquisitions, the user of accounting information is completely familiar with this type of information. In particular, target firm managers

and the target firm's board of directors, given the fact that they are subject to shareholders litigation, hire experts such as investment bankers and auditors with the view to justify the transparency of acquirer's financial reports.

As stated above, the acquirer firm may not choose to manage its earnings given the fact that the target firm and its advisors are informed users of accounting information and it is very easy for them to detect accounting tactics which are used in earning management and, as a result, the likelihood of detecting earnings management is high. The cost of detection could be off the essence for the acquirer in view of the fact that the target firm may request a higher exchange ratio or threaten to eliminate the transaction if earnings manipulation is detected.

All the same, albeit management of target firm detects earnings management may agree to continue to the deal of merger because of extraordinary personal treatment (Hartzell et al., 2004), for reasons of retirement or illiquid stock options (Shleifer and Vishny, 2003) or due to the fact that they undervalue the extent of the bidder's overvaluation (Rhodes-Kropf and Viswanathan, 2004).

Another significant point which worth to be mentioned is that the detection of earnings management is not only negative associated with the agreement of merger and the exchange ratio but also with the acquirer's stock price in general. Namely, several researches have examined market reactions when earnings management is detected. For instance, in accordance with Foster (1979) firms which are criticized by Abraham Briloff in the financial press for misleading financial reporting practices suffered an average drop in stock price of 8 percent on publication date. Dechow et al. (1996) declare that firms subject to SEC investigation for manipulating their earnings exhibit an average stock price decline of 9 percent when the earnings management was first revealed.

However, accounting standards can permit earnings management within the bounds of acceptable accounting procedures and, as a result target firm cannot prevent such accounting manipulation.

Finally, given the fact that both the acquirer and the target firm might manipulate its earnings prior to merger deal the adjustment of transaction price is inevitable. As a result, the acquirer firm may pay a higher price for the target if eventually did not manipulate its earnings as the target expected.

2.10. Prior Empirical Researches on Earnings Management ahead of Mergers and Acquisitions

It is an undeniable fact that that the hypothesis of investor rationality and efficient market is not rejected in the academic field. However, several studies have been conducted about earnings management in consideration with equity offers, initial public offers, stock financed acquisitions and management buyouts.

Recent studies point out that firms indulge in earnings management prior to equity offers (Teoh, Welch, and Wong 1998b; Shivakumar 2000), stock financed acquisitions (Erickson and Wang 1998) and initially public offers (Teoh, Welch, and Wong 1998a; Wong and Rao 1998). In particular, the findings indicate that firms report positive unexpected accruals prior to these transactions. There is also finding of a reversal of unexpected accruals followings initial public offers concerning with Teoh, Wong and Rao (1998) and stock financed acquisition in accordance with (Erickson and Wang 1998).

In case of management buyouts, studies have provided mixed results. In these transactions management buy the other company by cash, so it is argued that management has an incentive to decline earnings prior to the transaction in order to reduce the purchase price. However, DeAngelo (1986) finds little evidence of earnings management by buyouts firms from an examination of changes in accruals. On the contrary, Perry and Williams (1994) find strong evidence that management manipulates accounting accruals so as to reduce reported earnings. In essence, they examine unexpected accruals controlling for changes in revenues and depreciable capital and they conclude to income decreasing prior to a management buyout due to the fact that unexpected accruals are negative prior to the transaction.

In the field of stock financed mergers and acquisitions, the first extensive and considerable research has been conducted by Erickson and Wang (1999). Namely, Erickson and Wang examine unexpected accounting accruals in a sample of 55 mergers performed by US companies during the period 1985-1990 in order to investigate earnings management by acquiring firms in the periods prior to the merger and acquisition deal. Results indicate that acquiring firms manipulate total accruals and hence manage earnings upward in the periods prior to the merger agreement, particularly in the quarter immediately preceding the offer. Their results also prove that the degree of earnings management is positively related to the relative size of the merger. Apart from that, Erickson and Wang in a sample of acquiring firms that accomplished cash mergers find no evidence of earnings management prior to the transaction.

Louis (2004) examines a sample of 373 mergers (236 of which were pure stock swaps) of publicly traded US companies that were announced and completed in the period of 1992-2000 and finds strong evidence that acquiring firms inflate their earnings in the quarter preceding a stock swap announcement. Particularly, he indicates that discretionary working capital accruals are positive and statistically

significant for acquirers engaging in stock swaps in the quarter immediately prior to the merger announcement.

Last but not least, Botsari and Meeks (2008) examine a sample of 48 mergers and acquisitions of publicly traded UK companies during the period of 1997 and 2001, when mergers and acquisitions reached record levels. Their results indicate that, indeed, acquiring firms manipulate earnings upward through discretionary and working capital in the year immediately preceding the offer announcement.

It is worth to be mentioned, that there are two studies that end up to different conclusion with this of previous referred studies. In the first place, Heron and Lie (2002) examine a sample of 859 acquisitions (487 of which were paid with stocks only) performed by US companies and completed between 1985 and 1997 and they found that if the acquiring firms have a high performance prior to mergers and acquisitions announcement they may not engage in earnings management. Moreover, they argue that the reason for the difference in their study with Erickson and Wang may be attributable to different samples or different procedures for estimating unexpected accruals.

In addition, Koumanakos, Siriopoulos and Georgopoulos (2005) examine a sample of 42 mergers and acquisitions performed by Greek companies and completed between 2001 and 2003. They provide weak evidence of earnings management in the year preceding the announcement and the completion of the deal. Their results differ from that of Erickson and Wang due to the different methods that they used and given the fact that their sample contained both cash and stock financed mergers.

In an international background, Rahman and Bakar (2002) examine a sample of 125 Malaysian share acquiring firms during the period of 1991-2000 and concluded that managements in a year preceding acquisition manipulate earnings upward. Moreover, Aref Mahdavi Ardekani, Nejat Younesi and Mohammad Hashemijoo (2012) examine also a sample of Malaysian firms which is consisted of 50 share acquirer firms and 68 cash acquirer firms but in a different period, between 2004 and 2012. Their results indicate that share acquirers firms unlike cash acquirers manipulate their earnings preceding acquisition announcement date.

As stated above, target firms similar to acquiring firms, may also have incentives to inflate reporting earnings prior to merger announcement in an attempt to increase the transaction price. Erickson and Wang (1999) in an attempt to verify this they analyze the unexpected accruals for target firms in their sample. The result indicated that unexpected accruals were positive during pre-merger periods, but not significantly different from zero. In essence there is little or no evidence of income increasing for target firms prior to merger announcement. This result is consistence with the timing of the acquisition. In particular, the acquiring firm is aware of the potential buyout and hence has the appropriate time to manipulate its earnings. On the other side of the coin, the target firm usually is unaware of the potential buyout until the acquiring firm

begins the negotiations. The negotiations usually take place approximately for a quarter and, as a result, the target firm has insufficient time to manipulate its earnings. However, sometimes the news of the possible buyout leakage and consequently target firm achieve to manipulate its earnings. This is consistent with results by the study of Schwert (1996) who exhibit significant increases in target prices as far back one month before a merger announcement. As a result, in a merger the stock price adjustment is possible to start weeks before the merger announcement during the rumor phase of the merger.

2.11. Prior empirical researches on earnings management and acquiring firm's performance

Several prior researches exhibit the effects of earnings management on firm's performance (Bergstresser & Philippon, 2006; Chunguang, 2006; Erickson & Wang, 1999; Gong, Louis & Sun, 2008; Hamza & Lakhal, 2010; Hope, Kang & Kim, 2011; Leuz, Nanda & Wysocky, 2003; Louis, 2004; Sun & Rath, 2008). These researches indicate that acquirers experience significant losses in the years after to a merger announcement. Jensen and Ruback (1983) mention that the "post-outcome negative abnormal returns are unsettling because they are inconsistent with market efficiency and suggest that changes in stock prices during takeovers overestimate the future efficiency gain from mergers". In this area, Raghavendra Rau & Vermaelen (1998) specified reasons for underperformance of the firms after merger announcement. Furthermore, Louis (2004) find that the firms that manipulated their earnings to acquire target firms by stock swap have experienced stock underperformance after the acquisition date. He finds that the reversal of the consequences of pre-merger earnings management is an important determinant of both the short-term and the long-term performance of stock-for-stock acquirers. In particular, he mentions that there is a significant negative correlation between the abnormal accruals and the long term stock performance for the stock-for-stock acquirers. His evidence illustrates, also, that the reversal of the effects of pre-merger earnings management by stock-for-stock acquirers is not fully anticipated by financial analysts in the month immediately following the merger announcement.

Another research which is relevant to pre-merger performance but not generally accepted has been conducted by Shivakumar (2000). Namely, Shivakumar mention that when performance is measured by using a matched-firm controlled sample there is no significant correlation between discretionary accruals and issuers' long-term performance. He also concludes to the fact that the market is able enough to undoing the effects of earnings management at the announcement of CEO. However, this conclusion is not realistic due to the fact that market in order to undo the effects of earnings management should include investors who are able to observe managers' actions or at least, fully comprehend managers' opportunity sets and all the tools of earnings management that are available and general acceptable in the frames of

standard setting. Given the fact that managers have a variety of ways to manipulate earnings, it is impossible for the market to know exactly the degree and the extension of earnings management and the impact of manipulation to their financial reports. Moreover, Shivakumar end up, also, to another conclusion. In particular, he declares that "since issuers cannot credibly signal the absence of earnings management, investors threat all firms announcing an offering as having overstated prior earnings, and consequently discount their stock price". To a similar conclusion end up also Erickson & Wang (1999) who infer that the market given that anticipates that acquiring firm will manipulate its earnings upward, discount its stock price at the announcement of stock swap whether the firm manipulate earnings or not. Consequently, acquiring firm best engage in earnings management.

3. Sample and Methodological Issues

In this chapter will be illustrated the criteria which used in order to determine the final sample in which I investigate whether acquiring firms from Germany, France and United Kingdom manipulate earnings upward prior to a merger and acquisition deal. Next, I represent the steps of the merger and acquisition deals and the year in which companies can manipulate their earnings. Finally, I will perform the model which I use in order to conclude to final results.

3.1. Sample Description

The sample, examined in this study, is comprised of mergers and acquisitions announced and completed between 1January, 2005 and 31 December, 2015 by German, French and UK companies. This sample is retrieved by the financial analysis desktop of Thomson Reuters, Eikon. While, the sample includes only German, French and UK acquiring firms, I have no restrictions on the nationality and the status of the target firms with the view to secure a broad range of merger and acquisition activity. Namely, the criteria that I employ with the view to form the initial sample of my study, are the above:

I.   The deal was successfully completed during the investigation period.
II. The sample contains only acquisitions of majority interest and mergers that were financed 100% by stocks. So, the sample does not contain mergers and acquisitions were financed by cash.
III. The acquiring company is a German, French or UK publicly traded company.
IV. Financial acquiring companies have been excluded from the sample. The main concept behind this criterion is the fact that the financial reporting environment of these companies is different from those of the industrial companies.
V.   The sample contains transactions with deal value equal or greater than 10 millions.
VI. The sample contains only friendly and neutral merger and acquisition deals. Hostile deals or tender offers are excluded from the sample due to the fact that these transactions do not contain the negotiation of the exchange ratio. Apart from that, prior studies have shown that stock for stock transactions are usually not structure as tender offers and they are rarely hostile.

Consequently, the initial sample of my study contains 120 companies that were involved in 127 transactions. In more detail, the sample contains 11 German publicly traded companies that were involved in 13 transactions, 19 French publicly traded companies that were engaged in 21 transactions and, finally, 90 UK publicly traded companies that were involved in 93 transactions.

It is worth to be mentioned that firms have to hold accounting data at least 6 years prior to the announcement date in order to be included to the final sample (Defond and Jiambalvo, 1994; Subramanyam, 1996; Gore et al., 2001. In this study, accounting data of publicly traded acquiring firms are retrieved by the database of DataStream.

Furthermore, in cases where a company engage in more than one transaction during the sample period, only the first transaction contained in final sample in order to have clean estimations (Botsari and Meaks, 2008).

Moreover, the sample does not contain companies that have observations in which the absolute value of total accruals scaled by lagged total assets are greater than one. In compliance with Louis (2004) and Kothari et al (2005) these companies are deleted from the initial sample.

Last, but not least, in accordance with Erickson and Wang (1999) extremes observations are, also, excluded by the final sample. They based their argument on the study of Dechow et al.(1995) who indicate that accrual models may generate biased estimations when applied on firms with extreme financial performance.

Next, I will represent these criteria in my initial sample for each acquiring company's nationality, separately, with the view to end up to the final sample.

German publicly traded companies

Initial sample: 11 companies that were involved in 13 transactions.

No accounting data: 2 companies that were involved in 2 transactions.

Other exclusions: 2 companies that have |TA/ Lagged T. ASSETS|>1, 1 company that were involved in 3 different transactions during the sample period.

Final sample: 7 companies that were involved in 7 transactions.

French publicly traded companies

Initial sample: 19 companies that were involved in 21 transactions.

No accounting data: 5 companies that were involved in 5 transactions.

Other exclusions: 2 companies that were involved in 2 transactions separately, during the sample period.

Final sample: 14 companies that were involved in 14 transactions.

<u>UK publicly traded companies</u>

Initial sample: 90 companies that were involved in 93 transactions.

No accounting data: 52 companies that were involved in 52 transactions.

Other exclusions: one company participates in 2 transactions during the sample period, and another company participates in 3 transactions during the sample period. In addition, 4 companies have |TA/ASSETS|>1.

Final sample: 31 companies that were involved in 31 transactions.

As a result, the final sample contains 52 mergers and acquisitions deals that were conducted by German, French and UK publicly traded companies during the period 2005-2015.

The following tables provide descriptive statistics for acquiring firms concerning to their nationality.

Table 1

Descriptive Statistics for a Sample of 7 German-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

	Mean	Median	Minimum	Maximum	Std. Dev.
OCF (in €000)	32,640.71	15,039.00	-14,003.00	123,414.00	50,708.12
NET SALES (in €000)	611,836.00	472,300.00	4,846.00	2,434,248.00	852,970.42
TOTAL ASSETS (in €000)	1,202,278.57	207,519.00	45,542.00	4,827,100.00	1,777,426.35
EBIT (in €000)	44,494.00	21,010.00	-92,711.00	295,200.00	121,523.02
MARKET CAPITALIZAT ION (in €000)	603,237.85	156,885.00	33,008.00	2,046,001.00	756,298.26
BOOK VALUE (in €000)	362,696.43	102010.00	35,664.00	1,609,300.00	564,068.06
MARKET VALUE (in€000)	605.23	170.59	29.82	2,150.16	776.59
DEALSIZE (in €m)	398.93	65.714	20.73	2,223.67	810.97
ROA (%)	-7.91	2.13	-46.39	24.82	24.46
NET PROFIT (in €000)	9,921.00	8,838.00	-22,050.0	81,643.00	34,882.60

Notes:

The Descriptive statistics include Cash Flows from Operations (OCF), Net Sales, Total Assets, Earnings Before Interest and Taxes (EBIT), Market Capitalization, Book Value of Common Equity, Market Value, Return on Assets (ROA) and Net Profit of German-listed acquirers in the Event Year (before the announcement of an m&a deal). The corresponding Worldscope items are WC04860, WC01001, WC02999, WC18191, WC08001, WC03501, MV, WC08326 and DWNP respectively. Deal size is the total consideration paid for the target company and is retrieved by the financial analysis desktop of Thomson Reuters Eikon.

Table 2

Descriptive Statistics for a Sample of 14 French-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

	Mean	Median	Minimum	Maximum	Std. Dev.
OCF (in €000)	702,296.00	72,358.00	-21,321.00	4,171,400.00	1,455,232.79
NET SALES (in €000)	5,328,279.43	917,728.00	747,000.00	33,930,300.00	10,090,352.33
TOTAL ASSETS (in €000)	7,642,447.14	1,392,683.50	17,743.00	51,648,400.00	15,795,895.18
EBIT (in €000)	668,538.54	26,176.00	-437,500.00	4,949,000.00	1,620,293.56
MARKET CAPITALIZATION (in €000)	5,979,215.07	659,868.00	88,523.00	58,928,248.00	15,703,757.00
BOOK VALUE (in €000)	2,240,093.43	322,001.50	7,438.00	17,198,000.00	4,835,838.65
MARKET VALUE (in€000)	6,102.25	562.84	101.530.00	60,377.00	16,097.50
DEALSIZE (in €m)	686.49	312.54	10.06	2,811.27	809.98
ROA (%)	-6.77	1.45	-76.83	10.07	22.10
NET PROFIT (in €000)	280,933.57	21,193.50	-212,30	2,118,000.00	679,744.00

Notes:

The Descriptive statistics include Cash Flows from Operations (OCF), Net Sales, Total Assets, Earnings Before Interest and Taxes (EBIT), Market Capitalization, Book Value of Common Equity, Market Value, Return on Assets(ROA) and Net Profit of French-listed acquirers in the Event Year (before the announcement of an m&a deal). The corresponding Worldscope items are WC04860, WC01001, WC02999, WC18191, WC08001, WC03501, MV, WC08326 and DWNP respectively. Deal size is the total consideration paid for the target company and is retrieved by the financial analysis desktop of Thomson Reuters Eikon.

Table 3
Descriptive Statistics for a Sample of 31 UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

	Mean	Median	Minimum	Maximum	Std. Dev.
OCF (in £000)	61,835.06	3,618.00	-24,360.00	1,127,123.00	209,383.02
NET SALES (in £000)	639,425.00	64,269.00	760.00	5,725,225.00	149,0491.27
TOTAL ASSETS (in £000)	653,481.64	99,740.00	3,430.00	8,055,612.00	1,647,431.04
EBIT (in £000)	80,707.60	2,608.00	-46,017.00	1,187,582.00	240,213.54
MARKET CAPITALIZA TION (in £000)	754,477.22	122,577.00	1,159.00	11,156,077.00	2,130,420.49
BOOK VALUE (in £000)	326,458.42	55,200.00	-18,832.00	4,054,785.00	832,044.45
MARKET VALUE(in £000)	993.59	96.16	11.99	15,623.09	2,971.99
DEALSIZE (in m £)	577.375	50.61	10.43	5,515.30	1,423.21
ROA (%)	-0.77	3.12	-41.51	69.13	20.84
NET PROFIT (in £000)	55,252.60	1,407.00	-51,329.00	873,165.00	179,919.00

Notes:

The Descriptive statistics include Cash Flows from Operations (OCF), Net Sales, Total Assets, Earnings Before Interest and Taxes (EBIT), Market Capitalization, Book Value of Common Equity, Market Value, Return on Assets (ROA) and Net Profit of UK-listed acquirers in the Event Year (before the announcement of an m&a deal). The corresponding Worldscope items are WC04860, WC01001, WC02999, WC18191, WC08001, WC03501, MV, WC08326 and DWNP respectively. Deal size is the total consideration paid for the target company and is retrieved by the financial analysis desktop of Thomson Reuters Eikon.

As shown from tables 1,2and 3 the German, French and UK-listed acquiring firms are on average profitable with mean yearly net profit of €9,921.00, €280,933.57 and £55,252.60, respectively. The transaction amounts of stock for stock mergers when the acquirers are German-listed firms ranges between €20.73 million to €2,223.67 with an average of €810.97. Corresponding, the deal size of French-listed acquirers is in the range €10.06 million to €2,811.27 million with an average of €686.49. Finally, UK-listed acquirers report a range of transaction price among £10.43 million to £ 5,515.30 million with an average of £577.375. These data indicates that the deal size of the stock for stock corporate mergers are substantial and, therefore the acquirers may have economic benefits of manipulating earnings prior to the merger's announcement.

3.2. Identifying Years of Possible Earnings Management

In accordance with prior researches every merger and acquisition transaction is divided into three periods, the announcement date, the agreement date and the completion date. The announcement date is defined as the date in which is announced the purpose of the merger or the initiation of negotiations in financial press. The agreement date is the date in which a formal agreement for the terms of the deal is reached. Finally, the completion date is the date in which the deal is completed and it is reported to financial press.

Literature of earnings management, in this field, indicates that companies engage in earnings manipulation in periods of earnings release prior to the announcement date of the merger. (Botsari and Meaks, 2007, Erickson and Wang, 1999).

In addition, the year in which earnings release occurs preceding the announcement of the merger, is defined as Year 0. In essence, this year is the Event Year in which the manipulation of earnings takes place.

It is worth to be mentioned that the financial analysis desktop of Thomson Reuters, Eikon, from which I receive the sample of companies that engage in merger and acquisition transactions during the investigating period, contains only the announcement date and the effective date of the transactions. Apart from that, in order to assess the event year of each merger and acquisition transaction I take into account the date of fiscal year end of each firm, which retrieved by the database of DataStream (WC05350), in the year in which the announcement of merger and acquisition transaction made.

Next, I represent a table which contains the announcement date, the effective date, the fiscal year end date and the corresponding event year for each company which involved in merger and acquisition transaction during the investigating period. The following dates and especially the evaluating event years are of the essence in this study because the model which I will use in order to assess whether acquiring firms engage in earnings management prior merger and acquisition deals based on these dates.

Table 4
M&A Deals during the period 2005-2015 and the corresponding Announcement Date,
Effective Date, Date of Fiscal Year End and Event Year.

FIRM NAME	ANNOUNCEMENT DATE	EFFECTIVE DATE	YEAR END	EVENT YEAR
Stroeer SE & CO KGaA	13/8/2015	2/11/2015	31/12/2015	2014
Heidelberger Druckmaschinen AG	10/6/2014	18/8/2014	31/3/2014	2014
Cancom Se	30/9/2013	30/9/2013	31/12/2013	2012
Deutsche Wohnen AG	20/8/2013	27/11/2013	31/12/2013	2012
Evotec AG	6/3/2005	6/3/2005	31/12/2005	2004
Paion Ag	10/4/2008	23/6/2008	31/12/2008	2007
MediGene AG	30/8/2006	29/9/2006	31/12/2006	2005
Maurel et Prom SA	27/8/2015	23/12/2015	31/12/2015	2014
Generale de Sante SA	19/5/2015	1/7/2015	30/6/2015	2014
Nicox SA	2/7/2014	27/10/2014	31/12/2014	2013
BioAlliance Pharma SA	16/4/2014	5/8/2014	31/12/2014	2013
Sopra Steria Group SA	8/4/2014	10/9/2014	31/12/2014	2013
Korian SA	18/11/2013	18/3/2014	31/12/2013	2012
Vivalis SA	16/12/2012	28/5/2013	31/12/2012	2011
LVMH Moet Hennessy Louis	7/3/2011	30/6/2011	31/12/2011	2010
Jacquet Metals SA	3/2/2010	20/7/2010	31/12/2010	2009
Faurecia SA	2/11/2009	8/2/2010	31/12/2009	2008
Vinci SA	31/8/2009	14/4/2010	31/12/2009	2008
CGGVeritas	10/11/2008	3/2/2009	31/12/2008	2007
Icade EMGP	20/9/2007	30/11/2007	31/12/2007	2006
Ingenico SA	29/6/2006	6/2/2007	31/12/2006	2005
Micro Focus International PLC	15/9/2014	20/11/2014	30/4/2014	2014
Monitise PLC	27/6/2014	27/6/2014	30/6/2014	2013
Gemfields PLC	21/11/2012	25/1/2013	30/6/2012	2012
Castletone	17/9/2012	9/11/2012	31/3/2012	2012
Parkmead Group PLC	23/5/2013	31/7/2013	30/6/2013	2012
Sinclair Pharma PLC	14/2/2011	20/5/2011	30/6/2011	2010
Firestone Diamonds PLC	21/7/2010	30/9/2010	30/6/2010	2009
Mears Group PLC	18/12/2009	27/1/2010	31/12/2009	2008
Chime Communications PLC	22/9/2009	19/2/2010	31/12/2009	2008
Connaught PLC	15/7/2009	2/9/2009	31/8/2009	2008
Northern Petroleum PLC	3/4/2009	25/6/2009	31/12/2009	2008
Avocet Mining PLC	14/4/2009	16/6/2009	31/12/2009	2008
CSR PLC	10/2/2009	26/6/2009	1/1/2009	2008
Peter Hambro Mining PLC	9/1/2009	22/4/2009	31/12/2009	2008
BTG PLC	18/9/2008	4/12/2008	31/3/2008	2008
Gamingking PLC	2/9/2008	30/9/2008	30/4/2008	2008
Antisoma PLC	10/1/2005	4/2/2005	30/6/2005	2004
Formation Group PLC	29/5/2007	21/6/2007	31/8/2007	2006
Taylor Woodrow PLC	26/3/2007	3/7/2007	31/12/2007	2006

Oxford BioMedica PLC	12/3/2007	15/3/2007	31/12/2007	2006
Celtic Resources Holdings PLC	7/11/2006	20/12/2006	30/6/2006	2006
Stanley Leisure PLC	25/1/2005	25/1/2005	1/5/2005	2004
Wagon PLC	20/2/2006	4/4/2006	31/3/2006	2005
Abacus Group PLC	26/10/2005	17/1/2006	30/9/2005	2004
Quadnetics Group PLC	23/9/2005	9/11/2005	31/5/2005	2005
Boots Group PLC	3/10/2005	31/7/2006	31/3/2005	2005
SABMiller PLC	19/7/2005	12/10/2005	31/3/2005	2005
Vernalis PLC	6/7/2005	26/7/2005	31/12/2005	2004
SCI Entertainment Group PLC	22/3/2005	16/5/2005	31/12/2005	2004
Huntsworth PLC	21/2/2005	27/4/2005	31/12/2005	2004
Universal Direct Group PLC	24/2/2005	10/5/2005	31/3/2005	2004

Notes:

This table contains all firms that engage in merger and acquisition deals during the period 2005-2015. It illustrates the announcement and effective date of each deal, the fiscal year end of each firm and the evaluating corresponding event year of each merger and acquisition deal. The announcement and the effective date are retrieved by the financial analysis desktop of Thomson Reuters Eikon. The date of fiscal year end of each firm is retrieved by DataStream (WC05350).

3.3.   Accruals Measurement

On the whole, in order to measure accruals there are two different ways. In essence, accruals can be obtained thought the balance sheet or through the cash flow statement. Prior researches have been concluded to mixed results regarding to the most efficient way of measuring accruals. Namely, Hribar and Collins (2002) declare that it is better to obtain accruals directly from the cash flow statement due to the fact that when a merger and acquisition deal occurs in a company it is undeniable that net current assets will be increased and, consequently, the balance sheet approach will introduce bias estimations. Apart from that, Ball and Shivakumar (2007) support the same argument in their study. In essence, they prove that the estimation of accruals using the balance sheet approach is biased in favor of earnings management hypothesis and, hence, the estimated discretionary total accruals are too large to be credible.

On the other side of the coin, Gore et al. (2001) do not support the previous findings. In precisely, they consider that measuring accruals by using the cash flow statement is, also, problematic method. They refer that total accruals, in this method, are estimated by operating profit minus operating cash flows and they state that this difference contains a number of idiosyncratic accruals that cannot be categorized systematically as discretionary or non-discretionary accruals.

Botsari and Meeks (2008) in their study examined both approaches of obtaining accruals in order to end up to the most appropriate way. They conclude to the fact that the manipulation of earnings prior to the deal by acquiring companies is confirmed by both approaches. Nevertheless, they find statistically more significant results when they use the cash flow approach for measuring accruals.

Another issue regarding the measurement of accruals is the treatment of depreciation. A number of studies exclude the term of depreciation and amortization when measuring total accruals and concentrate only on working capital accruals (DeFond and Jiambalvo, 1994; Teoh et al., 1998a and 1998b; Peasnell et al., 2000a and 200b; Louis, 2004). Namely, Beneish (1998) and Young (1999) agree that depreciation has limited potential as an instrument of earnings management given that it is predictability, visibility and rigidity. In addition, Hunt et al. (1996) in their study provide evidence which support that managers do not use depreciation accruals so as to manipulate earnings.

Another salient factor in favor of using working capital accruals as accruals measurement is the fact that working capital accruals contains judgmental items, such as provisions for doubtful debts, warranties and inventory obsolescence, that are used to a greater extent by management to manipulate earnings in accordance with prior researches.

Last, but not least, the only difference between total and working capital accruals as accruals measurement based on the standard Jones model (1991) is that the term property, plant and equipment is excluded as an explanatory variable in this model due to the fact that depreciation is not contained in the definition of accruals.

In conclusion, taking into account all these that mentioned above, in this study I examine both total and workings capital accruals obtained from the cash flow statement so as to end up whether acquirers manipulate earnings prior to merger and acquisition deals.

3.4. Modeling Accruals

Concerning the objective of this study, I employ the standard Jones model (1991) which analyzed in chapter 2. The standard Jones model is the most applied model in this field and the most suitable to estimate discretionary total and working capital accruals (Balatbat and Lim, 2003). I do not apply the Modified Jones model (1995), provided by Dechow et al. due to the fact that acquiring firms that included to my final sample do not have efficient accounting data for accounts receivable and, hence, my sample will be decreased to a greater extent. However, I do not face any problem to my estimations given the fact that recent studies have shown that these two models are identical (Rajgopal and Venkatachalam, 1998; Kothari et al.,2005; Peasnell et al.,

2000b). In essence, these studies support that change in account receivable is deducted from change in revenues at a second stage so, the Original Jones Model does not conclude to biased estimations.

In light of the fact that I adopt both total and working capital accruals from the cash flow statement to measure earnings management, the standard Jones model takes the following forms:

$$TA_{i,t} = a_1 + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_{i,t} \tag{1}$$

Where:

$TA_{i,t}$= Total accruals in year t for firm i scaled by total assets ($A_{i,t-1}$).

$DREV_{i,t}$ = Revenues in year t less revenues in year t-1 for firm i scaled by total assets ($A_{i,t-1}$).

$PPE_{i,t}$ = Gross property, plant and equipment in year t for firm i scaled by total assets ($A_{i,t-1}$).

$A_{i,t-1}$= Total assets in year t-1 for firm i.

$\varepsilon_{i,t}$=error term in year t for firm i.

a_1, a_2, a_3 = Firm specific coefficients

i=1,..,N firm index.

t=1,..,$T_i$year index.

And,

$$WCA_{i,t} = a_1 + a_2 * DREV_{i,t} + \varepsilon_{i,t} \tag{2}$$

Where:

$WCA_{i,t}$= working capital accruals in year t for firm i scaled by total assets ($A_{i,t-1}$).

In the above equations, all the variables are known or can be calculated in the excel worksheet. Consequently, it is easy to estimate the firm specific coefficients by the Ordinary Least Squares (OLS) approach in the years prior to the event year and use these coefficients to the following equations so as to estimate discretionary total and working capital accruals.

$$EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p}) \tag{3}$$

$$EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p}) \tag{4}$$

Where:

$EDTA_{i,p}$= Estimated discretionary total accruals for firm i in the event year p.

$EDWCA_{i,p}$= Estimated discretionary working capital accruals for firm i in the event year p.

p= the event year.

The equations (3) and (4) are calculated in the event year for each sample firm, separate.

It is worth to be mentioned that in equations (2) and (4) the term of PPE is omitted in accordance with the corresponding literature which mentioned above.

In prior equations, in accordance with the theoretical background, total accruals defined as net income minus cash flows from operations (Bowen et al., 1986; DeAngelo et al., 1994; Defond and Jiambalvo, 1994; Healy, 1985; Liberty and Zimmerman, 1986). Cash flows from operation are calculated by working capital from operations minus the sum of changes in inventory, accounts receivables, and other current assets, plus the sum of changes in accounts payable, income tax payable and other current liabilities. Working capital from operations is calculated by the sum of income before extraordinary items, depreciation and amortization, extraordinary items and discontinued operations, deferred taxes, equity in net loss, sales of property, plant and equipment, and sale of investment and funds from operations.

In essence, in my study these variables are received by DataStream, using the longest available time series of data. For each sample firm I retrieve the variable of operating income (WC01250) and the variable of operating cash flows (WC04860) so as to estimate the total accruals of the firm. In the case on working capital accruals, I retrieve the variable of depreciation (WC04051) in order to deduct it from total accruals. In additional, I retrieve the net sales (WC01001) for each sample firm with the view to estimate the change in revenues and, finally, I receive the variable of property, plant and equipment (WC02301).

Furthermore, the variables change in revenues and property, plant and equipment that involved in prior equations are in order to control for the expected components in total accruals. Prior studies have shown that working capital accruals are increased with revenues, and total accruals are increased with property, plant and equipment.

Another salient point which is worth to be mentioned is the fact that I use the standard Jones model (1991) but without scaling constant term by lagged total assets. Jones when introduced his research based on the study of Kmenta (1986). Particularly, Kmenta established in his study that weighted least squares approach to estimating a regression equation with a heteroskedasticity term can be attained by dividing both

sides of the regression equation by lagged total assets. Consequently, all variables in Jones model are scaled by lagged total assets in order to reduce heteroskedasticity. However, recent studies provide evidence in favor of including a true constant term in regression equations (Peasnell et al.; 2000a, Kothari et al.;2005). Namely, Peasnell et al. (2000a) refer that there is no theoretical reason to scale the constant term and, consequently, force the regression through the origin. In additional, Kothari et al. (2005) indicate some reasons for including a true constant term. In the first place, they refer that a true constant term provides an additional control for heteroskedasticity not mitigated by using assets as the deflator. Apart from that, they state that constant term, also, alleviates the problem of omitted variable.

Furthermore, Defond and Jiambalvo (1994) and Kmenta (1971) states that the problem of biased standard error estimates due to the heteroskedasticity problem is not a major concern given the fact that parameter estimates are used for predictive purpose and not for examining the statistical significance of the parameters.

The tables bellow, represents the descriptive statistics of Jones Model's components for each acquirer's nationality separate and for the whole sample.

Table 5

Descriptive Statistics of Jones Model components for German-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model A: $TA_{i,t} = a_1 + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_{i,t}$

Model B: $WCA_{i,t} = a_1 + a_2 * DREV_{i,t} + \varepsilon_{i,t}$

	Mean	Median	Minimum	Maximum	Std. Dev.
DEPRECIATION (in €000)	26,159.43	7,404.00	393.00	80,769.00	34,612.65
NET SALES (in €000)	611,835.85	472,300.00	4,846.00	2,434,248.00	852,970.42
PPE (in €000)	1,033,233.57	96,226.0	2,480.00	4,644,900.00	1,744,907.02
TOTAL ASSETS (in €000)	1,202,278.57	207,519.00	45,542.00	4,827,100.00	1,777,426.36
TOTAL ACCRUALS (in €000)	1,604.14	1,219.00	-94,972.00	71,723.00	52,654.50
WCA (in €000)	27,763.60	2,146.00	-14,203.00	142,563.00	54,408.10
DREV (in €000)	-116,923.00	-76,832.00	-1,876,168.00	1,713,156.00	1,144,091.18
TA/ASSETS	0.0468	0.0055	-0.0264	0.2244	0.0935
WCA/ASSETS	0.0684	0.0086	0.0004	0.2395	0.1020
DREV/ASSETS	0.0481	-0.2480	-0.8557	1.8078	0.9495
PPE/ASSETS	4.1125	0.0835	0.0137	22.3830	8.9880

Notes:

All the variables that contained in the descriptive statistics' table are from the event year in which the earnings management occurs. When earnings management is measured by discretionary total accruals obtained from the cash flow statement the structure of the Standard Jones Mode is: $TA_{i,t} = a_1 + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_{i,t}$. $TA_{i,t}$ is the total accruals measured by operating income (WC01250)minus operating cash flows (WC04860). Net sales are retrieved by the database of DataStream with a code WC01001so as to evaluate the variable $DREV_{i,t}$which is the revenues in the event year less revenues in the prior year. $PPE_{i,t}$is the gross property, plant and equipment of Germany-listed acquirers. This variable received by the database of DataStream with the code of WC02301. When earnings management is measured by the working capital total accruals from the cash flow statement the structure of the standard Jones Model is: $WCA_{i,t} = a_1 + a_2 * DREV_{i,t} + \varepsilon_{i,t}$, where $WCA_{i,t}$is the working capital accruals and are calculated by the operating income, the operating cash flows and the depreciation, depletion & amortization cash flows. The code of the depreciation, depletion & amortization cash flows in DataStream is WC0405. All the variables of the above models are scaled by lagged total assets so as to counteract the heteroskedasticity problem. So, in this table I represent the descriptive statistics for both scaled and un-scaled variables.

Table 6

Descriptive Statistics of Jones Model components for French-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model A: $TA_{i,t} = a_1 + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_{i,t}$

Model B: $WCA_{i,t} = a_1 + a_2 * DREV_{i,t} + \varepsilon_{i,t}$

	Mean	Median	Minimum	Maximum	Std. Dev.
DEPRECIATION (in €000)	292,373.21	3,5810.00	3.00	1,730,100.00	497,546.29
NET SALES (in €000)	5,328,279.43	917,728.50	747.00	33,930,300.00	10,090,352.33
PPE (in €000)	2,299,076.50	773,224.00	3,640.00	10,996,000.00	3,710,091.51
TOTAL ASSETS (in €000)	7,642,447.14	1,392,683.50	17,743.0	51,648,400.00	15,795,895.18
TOTAL ACCRUALS (in €000)	-112,036.64	-8,952,50	-1,174,600.00	239,000.00	332,313.49
WCA (in €000)	180,336.57	46,999.05	-135,500.00	1,024,000.00	312,601.89
DREV (in €000)	466,773.00	3084.50	-679,900.00	3,502,500.00	1,298,476.34
TA/ASSETS	-0.0220	-0.0231	-0.1829	0.0889	0.0644
WCA/ASSETS	0.0347	0.0262	-0.1645	0.2498	0.0966
DREV/ASSETS	-0.0072	0.0192	-0.8254	0.6007	0.2931
PPE/ASSETS	0.4534	0.2771	0.04437	1.0798	0.3629

Notes:

All the variables that contained in the descriptive statistics' table are from the event year in which the earnings management occurs. When earnings management is measured by discretionary total accruals obtained from the cash flow statement the structure of the Standard Jones Mode is: $TA_{i,t} = a_1 + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_{i,t}$. $TA_{i,t}$ is the total accruals measured by operating income (WC01250)minus operating cash flows (WC04860). Net sales are retrieved by the database of DataStream with a code WC01001so as to evaluate the variable $DREV_{i,t}$which is the revenues in the event year less revenues in the prior year. $PPE_{i,t}$is the gross property, plant and equipment of French-listed acquirers. This variable received by the database of DataStream with the code of WC02301. When earnings management is measured by the working capital total accruals from the cash flow statement the structure of the standard Jones Model is: $WCA_{i,t} = a_1 + a_2 * DREV_{i,t} + \varepsilon_{i,t}$, where $WCA_{i,t}$is the working capital accruals and are calculated by the operating income, the operating cash flows and the depreciation, depletion & amortization cash flows. The code of the depreciation, depletion & amortization cash flows in DataStream is WC0405. All the variables of the above models are scaled by lagged total assets so as to counteract the heteroskedasticity problem. So, in this table I represent the descriptive statistics for both scaled and un-scaled variables.

Table 7

Descriptive Statistics of Jones Model components for UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model A: $TA_{i,t} = a_1 + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_{i,t}$

Model B: $WCA_{i,t} = a_1 + a_2 * DREV_{i,t} + \varepsilon_{i,t}$

	Mean	Median	Minimum	Maximum	Std. Dev.
DEPRECIATI0N (in €000)	25,887.42	3,193.00	89.00	465,316.00	85,715.11
NET SALES (in €000)	639,425.25	64,269.00	760.00	5,725,225.00	1,490,491.27
PPE (in €000)	275,164.20	17,674.00	249.00	3,808,800.00	815,901.81
TOTAL ASSETS (in €000)	653,481.65	99,740.00	3,430.00	8,055,612.00	1,647,431.04
TOTAL ACCRUALS (in €000)	5,559.71	-200.00	-313,629.00	349,900.00	90,377.14
WCA (in €000)	31,447.13	2,711.00	-22,703.00	357,600.00	83,589.68
DREV (in €000)	57,064.42	6,296.00	-36,300.00	657,702.00	128,924.02
TA/ASSETS	-0.0150	-0.0026	-0.4892	0.2257	0.1255
WCA/ASSETS	0.0365	0.0325	-0.3451	0.2857	0.1155
DREV/ASSETS	0.2447	0.0411	-0.1078	0.9908	0.3416
PPE/ASSETS	0.5457	0.1805	0.0198	6.7209	1.1903

Notes:

All the variables that contained in the descriptive statistics' table are from the event year in which the earnings management occurs. When earnings management is measured by discretionary total accruals obtained from the cash flow statement the structure of the Standard Jones Mode is: $TA_{i,t} = a_1 + a_2 * DREV_{i,t} + a_3 * PPE_{i,t} + \varepsilon_{i,t}$. $TA_{i,t}$ is the total accruals measured by operating income (WC01250)minus operating cash flows (WC04860). Net sales are retrieved by the database of DataStream with a code WC01001so as to evaluate the variable $DREV_{i,t}$ which is the revenues in the event year less revenues in the prior year. $PPE_{i,t}$ is the gross property, plant and equipment of UK-listed acquirers. This variable received by the database of DataStream with the code of WC02301. When earnings management is measured by the working capital total accruals from the cash flow statement the structure of the standard Jones Model is: $WCA_{i,t} = a_1 + a_2 * DREV_{i,t} + \varepsilon_{i,t}$, where $WCA_{i,t}$ is the working capital accruals and are calculated by the operating income, the operating cash flows and the depreciation, depletion & amortization cash flows. The code of the depreciation, depletion & amortization cash flows in DataStream is WC0405. All the variables of the above models are scaled by lagged total assets so as to counteract the heteroskedasticity problem. So, in this table I represent the descriptive statistics for both scaled and un-scaled variables.

4. Results and Multivariate Analysis

In this chapter the method which employed in order to conclude to final results will be illustrated. The analysis of the results also will be provided. Finally, I represent a multivariate analysis based on final results with the view to obtain a significant insight of factors which have strong connection with acquiring firm's earnings management.

4.1. Results

As stated in the previous chapter, I estimate the equations (1) and (2) in their time-series adaptation for each sample firm using the longest available time-series of data prior to the event year. In order to evaluate the parameter estimates of these equations for each sample firm I use the cross-platform software of Gretl. After evaluating parameters estimates, I combine them with firms' data in the event period so as to generate estimated discretionary total and working capital accruals for each firm and event year. Next, I evaluate the average of the estimated discretionary total and working capital accruals and I examine their statistically significant. This procedure was applied for each sample firm's nationality separate and, next, I conclude to results which correlated with the whole sample.

It is worth to be mentioned that, all sample firms have been examined for autocorrelation and heteroskedasticity problems so as to end up to the most suitable approach to evaluate the firms' specific coefficients. Consequently, despite the fact that all the variables in equation (1) and (2) are scaled by lagged total assets with the view to counteract the problem of heteroskedasticity, when I use the cross-platform software of Gretl to estimate the firms' specific coefficients, which are involved in the equation (1) and (2), by the ordinary least squares approach I, also, apply the White's test for heteroskedasticity. In this test the null hypothesis is that there does not exist heteroskedasticity in the model. If I reject this null hypothesis, I apply the weighted least squares approach in order to estimate the firms' specific coefficients. Apart from that, I check my model for autocorrelation problem when I apply the ordinary least squares approach by employing the Breusch-Godfrey's test. The null hypothesis in this test is that there does not exist correlation in residuals. If I reject this null hypothesis by taking into account the p-value which appeared in alternative statistic, I adopt the ordinary least squares approach by adding a lag to the dependent variable or I adopt the AR(1) approach only if the model suffers from first order autocorrelation. The analysis of autoregressive parameters under the Ordinary Least Squares approach is produced with the view to avoid conducting inefficient and biased parameter estimates.

All stated above are employed for each sample firms' nationality separate, in the first place, and then I represent the results regarding the total sample.

By examining the part of total sample which is consisted only by German-listed acquiring firms I appreciate that when I use total accruals as accruals measurement only 1 to7 sample firms deals with the problem of heteroskedasticity in its regression model. On the other hand, using working capital accruals as accruals measurement I evaluate that 2 to 6 sample firms deal with the problem of heteroskedasticity. None of sample firms encounter autocorrelation problem. In the following table I exhibit the descriptive statistics of the estimated discretionary total and working capital accruals, belonged to German- listed acquiring firms.

Table 8

Descriptive Statistics of EDTA and EDWCA for 7 German-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model A: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$

Model B: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$

	Mean	Median	Minimum	Maximum	Std. Dev.
EDTA	0.020552	0.035041	-0.081030	0.097228	0.069328
EDWCA	0.052471	0.062592	-0.068167	0.164100	0.076703

Notes:

The estimated discretionary total accruals (EDTA) and the estimated discretionary working capital accruals (EDWCA) are evaluated by employing the standard Jones model (1991) in the event year for each sample firm. When I use the discretionary accruals obtained from the cash flow statement the structure of the Jones model is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. When I use working capital accruals from the cash flow statement the structure of the Jones model is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. $TA_{i,p}$ is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$ is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. $WCA_{i,p}$ is the working capital accruals for firm i calculated by the operating income, the operating cash flows and the depreciation, depletion & amortization cash flows. The code of the depreciation, depletion & amortization cash flows in DataStream is WC0405.

As shown, the mean and the median of the estimated discretionary total and working capital accruals are positive. In order to evaluate whether the men of these estimations is statistically significant, I employ the ordinary least squares approach in the cross-platform software of Gretl. I determine as dependent variable the estimated discretionary total accruals and the estimated discretionary working capital accruals, separately, and as independent variable I use only the constant term. The results of this test represented in the below tables.

Table 9

Testing for the statistical Significance of EDTA for 7 German-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$

Mean EDTA	Std. error	t-ratio	p-value
0.020552	0.026203	0.7843	0.4627

Notes:

Results for the standard Jones model are based on the estimated discretionary total accruals (EDTA) of 7 German publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. $TA_{i,p}$ is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$ is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.

Table 10

Testing for the statistical Significance of EDWCA for Germany-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$

	Mean EDWCA	Std. error	t-ratio	p-value
	0.052471	0.031314	1.676	0.1547

Notes:

Results for the standard Jones model are based on the estimated discretionary working capital accruals (EDWCA) of 7 German publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. $WCA_{i,p}$ is the working capital accruals for firm i and are calculated by the operating income (WC01250), the operating cash flows(WC04860) and the depreciation, depletion & amortization cash flows (WC0405). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.

The null hypothesis in these tests is that the mean of estimated discretionary total and working capital accruals is not significantly positive for German-listed acquiring firms prior to the announcement date of the merger and acquisition deal. Given the fact that the p-value of the above regressions is greater than 10%, I accept the null hypothesis. Consequently, there is evidence which support that Germany-listed acquirers inflate earnings prior to the announcement of a merger and acquisition deal by manipulating discretionary total and working capital accruals, but this evidence is not statistically significant. These results differ from that of Erickson and Wang due to small number of German-listed acquiring firms during the investigation period.

Concerning the part of the total sample which consisted only of French-listed acquiring firms I appreciate that when I use total accruals as accruals measurement none sample firm deals with the problem of heteroskedasticity in their regression models. However there is one firm which appears first order autocorrelation and another which appears third order autocorrelation. On the other side of the coin, when I use working capital accruals from cash flow statement as a proxy of earnings management I assess that only one firm deals with heteroskedasticity problem, two firms encounter first order autocorrelation and one firm face third order autocorrelation. In the following table I represent the descriptive statistics of the estimated discretionary total and working capital accruals, belonged to French-listed acquiring firms.

Table 11

Descriptive Statistics of EDTA and EDWCA for 14 French-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model A: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$

Model B: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$

	Mean	Median	Minimum	Maximum	Std. Dev.
EDTA	0.034569	0.012501	-0.024511	0.22783	0.075520
EDWCA	0.037815	0.018909	-0.034822	0.19977	0.067350

Notes:

The estimated discretionary total accruals (EDTA) and the estimated discretionary working capital accruals (EDWCA) are evaluated by employing the standard Jones model (1991) in the event year for each sample firm. When I use the discretionary accruals obtained from the cash flow statement the structure of the Jones model is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. When I use working capital accruals from the cash flow statement the structure of the Jones model is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. $TA_{i,p}$ is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$ is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. $WCA_{i,p}$ is the working capital accruals for firm i calculated by the operating income, the operating cash flows and the depreciation, depletion & amortization cash flows. The code of the depreciation, depletion & amortization cash flows in DataStream is WC0405.

In this part of the total sample, also, the estimated discretionary total and working capital accruals appear to have positive mean and median estimators. Following the same analysis as conducted for German-listed acquirers I represent the statistically significant tests for the mean estimated discretionary total and working capital accruals of French-listed acquiring firms. The results of this analysis exhibited to the following tables.

Table 12

Testing for the statistical Significance of EDTA for 14 French-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$

Mean EDTA	Std. error	t-ratio	p-value
0.034569	0.020945	1.650	0.1248

Notes:

Results for the standard Jones model are based on the estimated discretionary total accruals (EDTA) of 14 French publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. $TA_{i,p}$ is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$ is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.

Table 13

Testing for the statistical Significance of EDWCA for French-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$

Mean EDWCA	Std. error	t-ratio	p-value
0.037815	0.0180001	2.101	0.0557 *

Notes:

Results for the standard Jones model are based on the estimated discretionary working capital accruals of 14 French publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. $WCA_{i,p}$ is the working capital accruals for firm i and are calculated by the operating income (WC01250), the operating cash flows(WC04860) and the depreciation, depletion & amortization cash flows (WC0405). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.

As shown, despite the fact that the estimated discretionary total accruals have positive mean and median, lack of significance at p-value < 10%, at least. On the other hand, the estimated discretionary working capital accruals are positive and statistically significant at the level of 10% (p-value=0.0557). In essence, these results provide evidence that depreciation has limited potential as an instrument of earnings management and managers do not use depreciation to a greater extent in order to manipulate earnings. These results are closely corresponded to prior evidence about the issue of depreciation in earnings management provided by the researches of Hunt et al. (1996), Beneish (1998), Young (1999) and Botsari and Meeks (2008).

In regard to the sample which is included only by UK-listed acquiring firms, I signify that when I use total accruals as accruals measurement only 3 of the 31 UK-listed acquirers deal with the problem heteroskedasticity in their regression models, which applied prior to the event year for each sample firm. In addition, two UK-listed firms appear fifth order autocorrelation, one firm deals with fourth order autocorrelation, another firm encounters third order autocorrelation, two firms appear second order autocorrelation and one firms deals with first order autocorrelation. Using working capital accruals as proxy of earnings management, I signify that 5 sample firms appear heteroskedasticity problem in their regression models. Furthermore, two sample firms appear first order autocorrelation, one sample firm deals with fifth order autocorrelation and another firm with sixth order autocorrelation.

In the following table I exhibit the descriptive statistics of the estimated discretionary total and working capital accruals belonged to UK-listed acquiring firms.

Table 14

Descriptive Statistics of EDTA and EDWCA for 31 UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model A: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$

Model B: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$

	Mean	Median	Minimum	Maximum	Std. Dev.
EDTA	0.071471	0.011301	-0.41908	0.56204	0.20440
EDWCA	0.038062	0.023819	-0.29698	0.42702	0.14592

Notes:

The estimated discretionary total accruals (EDTA) and the estimated discretionary working capital accruals (EDWCA) are evaluated by employing the standard Jones model (1991) in the event year for each sample firm. When I use the discretionary accruals obtained from the cash flow statement the structure of the Jones model is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. When I use working capital accruals from the cash flow statement the structure of the Jones model is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. $TA_{i,p}$ is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$ is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. $WCA_{i,p}$ is the working capital accruals for firm i calculated by the operating income, the operating cash flows and the depreciation, depletion & amortization cash flows. The code of the depreciation, depletion & amortization cash flows in DataStream is WC0405.

These descriptive statistics demonstrate that both estimated discretionary total and working capital accruals have positive mean and median estimators. Following the same analysis as conducted before for German and French-listed acquiring firms, the below tables represent the statistically significant results for the mean of the estimated discretionary and working capital accruals.

Table 15

Testing for the statistical Significance of EDTA for 31 UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

$$\text{Model: } EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$$

Mean EDTA	Std. error	t-ratio	p-value
0.0714713	0.0367127	1.947	0.0610 *

Notes:

*Results for the standard Jones model are based on the estimated discretionary total accruals(EDTA) of 31 UK publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. $TA_{i,p}$ is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$ is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.*

Table 16

Testing for the statistical Significance of EDWCA for UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

$$\text{Model: } EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$$

Mean EDWCA	Std. error	t-ratio	p-value
0.0380627	0.026208	1.452	0.1568

Notes:

*Results for the standard Jones model are based on the estimated discretionary working capital accruals (EDWCA) of 31 UK publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. $WCA_{i,p}$ is the working capital accruals for firm i and are calculated by the operating income (WC01250), the operating cash flows(WC04860) and the depreciation, depletion & amortization cash flows (WC0405). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.*

As shown, in the case of UK-listed acquirers the results are opposed to these of French-listed acquirers. Namely, in this case, the mean of estimated discretionary total accruals is positive and statistically significant at the level of 10% (p-value=0.0610) but the mean of estimated discretionary working capital accruals lack of significance (p-value=0.1568 >0.1). In light of this evidence, UK-listed acquiring firms prefer to manipulate earnings through total accruals ignoring the fact that depreciation, which included to total accruals, is more predictability, visibility and rigidity.

In the final stage, I represent the above analysis for the total sample which contains German, French and UK-listed acquiring firms.

In the following table the descriptive statistics of estimated discretionary total and working capital accruals are represented.

Table 17

Descriptive Statistics of EDTA and EDWCA for 52 German, French and UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model A: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$

Model B: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$

	Mean	Median	Minimum	Maximum	Std. Dev.
EDTA	0.055075	0.020882	-0.41908	0.56204	0.16570
EDWCA	0.039689	0.026392	-0.29698	0.42702	0.12068

Notes:

The estimated discretionary total accruals (EDTA) and the estimated discretionary working capital accruals (EDWCA) are evaluated by employing the standard Jones model (1991) in the event year for each sample firm. When I use the discretionary accruals obtained from the cash flow statement the structure of the Jones model is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. When I use working capital accruals from the cash flow statement the structure of the Jones model is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. $TA_{i,p}$ is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$ is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. $WCA_{i,p}$ is the working capital accruals for firm i calculated by the operating income, the operating cash flows and the depreciation, depletion & amortization cash flows. The code of the depreciation, depletion & amortization cash flows in DataStream is WC0405.

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As expected from the previous analysis the mean and the median of estimated discretionary total and working capital accruals are positive.

Next, having evaluated the mean of the estimated discretionary and working capital accruals for the whole sample, I represent the statistically significant tests of these estimations.

Table 18

Testing for the statistical Significance of EDTA for 52 German, French and UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$

Mean EDTA	Std. error	t-ratio	p-value
0.0550759	0.0232032	2.374	0.0215 **

Notes:

*Results for the standard Jones model are based on the estimated discretionary total accruals of 52 publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDTA_{i,p} = TA_{i,p} - (a_1 * + a_2 * DREV_{i,p} + a_3 * PPE_{i,p})$. $TA_{i,p}$is the total accruals for firm i calculated by the operating income (WC01250) and the operating cash flows (WC04860). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. $PPE_{i,p}$is the gross property, plant and equipment for firm i. This variable received by the database of DataStream with the code of WC02301. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.*

Table 19

Statistically Significant test of EDWCA for 52 German, French and UK-Listed Acquirers Undertaking Share Swap Deals Between 1 January, 2005 and 31 December, 2015.

Model: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$

Mean EDWCA	Std. error	t-ratio	p-value
0.0396899	0.0168998	2.349	0.0228 **

Notes:

*Results for the standard Jones model are based on the estimated discretionary working capital accruals of 52 listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The structure of the standard Jones model in the event year for each sample firm is: $EDWCA_{i,p} = WCA_{i,p} - (a_1 * + a_2 * DREV_{i,p})$. $WCA_{i,p}$ is the working capital accruals for firm i and are calculated by the operating income (WC01250), the operating cash flows(WC04860) and the depreciation, depletion & amortization cash flows (WC0405). $DREV_{i,p}$ is the revenues in the event year les the revenues in the prior year. All these variables are scaled by lagged total assets so as to counteract the heteroskedasticity problem. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.*

The above results indicate that the both methods of measuring accruals end up to statistically significant results and, also, to the same level of significant, at the level of 5%. Namely, the average of estimated discretionary total and working capital accruals are positive and statistically significant with a p-value of 0.0215 and 0.0228, respectively.

Consequently, in my study both methods of measuring accruals conclude to statistically significant results when they applied to the total sample, which contains a substantial number of merger and acquisition deals.

4.2. Multivariate analysis

I have indicated that German, French and UK acquiring firms, in total, manipulate earnings upward a year prior to the announcement date. In this part, I try to illustrate in what circumstances earnings management by acquirers are promoted. In order to achieve this, I form a multivariate analysis that contains a variety of variables that, in accordance with prior researches, activate acquiring firms to engage in earnings management. The multivariate analysis will be conducted to the total sample which contains a substantial number of merger and acquisition deals.

In the first place, I try to investigate whether the acquiring firm's earnings management constitutes an increasing function of the relative size of the transaction, the deal ratio. The deal ratio is defined as the ratio of the deal's value, which is the price paid for the target's equity, to the market value of the acquiring firm's equity (Erickson and Wang, 1999; Higgins, 2013).

In general, Erickson and Wang (1999) in their study have shown that earnings management is an increasing function of the economic benefits which emerged from a merger and acquisitions deal. They state that if the size of the target firm is relatively small in comparison with the size of the acquiring firm, the economic benefits from increasing stock price through managing earnings will also be relatively small. Given the fact that earnings management is not costless, when the economic benefits are negligible, the incentives for the acquiring firm to manage earnings are decreased. On the other hand, when the size of the target firm is relatively large compared to the size of the acquiring firm, the economic benefits are of the essence, and, hence, the acquiring firm is more prone to manipulate earnings.

Moreover, I will assess the relationship between the acquiring firm's earnings management and its performance. As performance measurement of the acquiring firm I adopt its index return on assets (ROA) reported in the event year. In accordance with McNichols (2000), ROA may be having positive or negative relationship with acquiring firm's earnings management. In particular, he declares that ROA may be positive because firms with high (low) earnings are likely to have positive (negative) shocks to earnings that contain an accrual component. On the other side of the coin, he considers that due to the fact that firms with high profitability have less pressure to inflate earnings upward than unprofitable firms, the relationship between ROA and earnings management can be negative.

Another significant variable which I take into consideration is the growth rate (GROWTH) of the acquiring firm in the event year. The growth rate is defined as the average of 3-years sales growth. Prior researches of McNicholes (2000) and Pungaliya (2009) have provided evidence of positive relationship between GROWTH and acquiring firm's earnings management. Particularly, they affirm that high firm's growth rate may increase the management's desire to report higher earnings.

Furthermore, I will evaluate the relationship between acquiring firm's earnings management and its debt ratio. Prior study of Watts and Zimmerman (1978) has indicated that firms have strong incentives to manipulate earnings due to debt covenants. Apart from that, Higgins (2013) in his research, states that acquirer's earnings management is a decreasing function of bank's monitoring. Namely, Diamond (1991) refers that acquirer's earnings management is a decreasing function of the cost to manipulate earnings. One such cost is the control which banks have over the acquiring firm. Banks can control firms because banks have access to private information of firms during their banking relationship. Moreover, banks have great influences on firms to which have borrowed capitals and, hence, banks can affect their daily operations and their action on major corporate events, as well. Finally, banks' personnel are able to see through earnings management and as a result are costly for firms to manipulate earnings prior to merger and acquisition deals. Significant evidence, in this field, also, provided by Bikki Jaggi and Picheng Lee (2002) who state that the income-increasing discretionary accruals or the income-decreasing discretionary accruals is depended on the severity of financial distress. Namely, they show that financial distressed firms manipulate earnings upward by using discretionary accruals with the view to attain waivers for debt covenant violations, and manipulate earnings downward in the case of renegotiating the terms of debt due to the rejection of debt's waivers or when the restructuring of debt have already taken place.

Last, but not least, with the view to provide additional control for acquiring firm's earnings management the multivariate analysis contains five dummies which provide information relative to the merger and acquisition deals that contained to the sample. In essence, the regression model will include dummies that declare whether the target is publicly traded firm or private firm, given the fact that all acquirers included in the sample are publicly traded firms, whether the merger and acquisition deal is domestic or cross-border, particularly cross-border deal is one where the target is a foreign company, whether the transaction occurs during a wave period or not and whether the nationality of acquiring publicly traded firm is UK or French.

The involvement of the Public Dummy in the multivariate analysis aims to investigate the relationship between the acquiring firm's earnings management and the target firm's listed status. Prior researches provide mixed results in this field. Namely, Bok Baik et al. (2007) have indicated that acquiring firms are more likely to manipulate earnings upward in stock financed mergers and acquisitions when the target is private-listed firm. They stated that acquiring firms encounter considerable uncertainty when valuing the stock of private-listed target firms given the fact that these firms do not have observable market prices, in comparison with public-listed firms which hold historical observable stock prices. Consequently, acquiring firms with the view to compensate for the additional risk which they carry, they manage earnings upward prior to a merger and acquisition deal. On the other hand, Beatty, Ke and Petroni (2002) examined U.S publicly and privately traded banks and they conclude to

different results of those which provided by the study of Bok Baik et al. (2007). So, the results which provided by the study of Bok Baik et al. (2007) may not be able to be generalized to all countries.

The addendum of the wave dummy aims to take into account the macroeconomic conditions that affect acquiring firm's earnings management. Prior researches have indicated that firms have strong incentives to inflate earnings upward during financial crisis years in order to compensate for the decrease of earnings, operational performance and stock price (Ahman-Zaluki, Campbell, & Goodacre, 2011; Charitou, Lambertides, & Trigeorgis, 2007). However, the research of Filip and Raffournier (2014) in the field of mergers and acquisition deals has indicated that that the European-listed acquiring firms' earnings management has been significantly decreased during periods of the economic crisis. Their evidence supported by the previous study of Chia, Lapsey, & Lee (2007) who justify that managers have less discretion to manipulate earnings during periods of economic recession given the fact that in those periods the monitoring of auditors, creditors and other stakeholders is increased.

In my study, as a wave period I define the expansion period in economic activity which includes the following years of my sample analysis: 2004-2007, 2013-2015. The non-wave period contains the years of the financial crisis.

The objection of adding fixed effect dummies in the multivariate analysis, i.e. UK and French dummy, aim to take into consideration the country characteristics that included in my sample. Namely, prior researches have shown that country's market and political environment create incentives to firms to manipulate earnings downward with the view to obtain governmental support, especially during periods of economic crisis (Peltzman, 1976; Ahmed, Godfey and Saleh, 2008). Apart from that, Kinnunen and Koskela (2003) in their study declare that the legal and regulatory environment of each country force firms to earnings management. In essence, they refer that when the level of shareholder protection is low, the possibility of earnings management by insider is high.

In more detail, the dummies will be equal to 1 for publicly traded target firms, domestic merger and acquisitions deals, wave period transactions, and UK and French acquirers. On the contrary, dummies will be equal to zero for private target firms, cross border merger and acquisitions deals, non wave period transactions and German traded acquirers.

Taking into consideration what stated above, the regression model will have the following structure:

$$EM_{i,p} = a_0 + a_1 * Deal\ Ratio_{i,p} + a_2 * ROA_{i,p} + a_3 * GROWTH_{i,p} + a_4 *$$
$$Debt\ Ratio_{i,p} + a_5 * Public\ Dummy_{i,p} + a_6 * Domestic\ Dummy_{i,p} +$$
$$a_7 * M\&A\_Wave\ Dummy_{i,p} + a_8 * \sum_{j=1}^{2} Country\_Dummies + \varepsilon_{i,p} \quad (1)$$

Where:

$EM_{i,p}$= discretionary accruals for firm i at event year p.

$Deal\ Ratio_{i,p}$= the deal value to the market value of the acquiring firm's equity at the event year p.

$ROA_{i,p}$= the acquiring firm's return on assets in the event year p.

$GROWTH_{i,p}$= acquirer three-year annualized sales growth in the three years leading to merger announcement.

$Debt\ Ratio_{i,p}$= the total debt to total assets of acquirers in the event year p.

$Public\ Dummy_{i,p}$= demonstrates whether targets are public or private-traded firms.

$Domestic\ Dummy_{i,p}$= demonstrates whether merger and acquisition deals are domestic or cross-border.

$M\&A\_Wave\ Dummy_{i,p}$= demonstrates whether merger and acquisition deals occur during wave periods.

$\varepsilon_{i,p}$= error term in the event year p.

$\sum_{j=1}^{2} Country\_Dummies$= contains the $UK\ and\ French\ Dummy_{i,p}$.

j= the country index.

i=1,..,N firm index

p= is the event year.

All accounting-based variables from the above model are taken in the fiscal year prior to the merger announcement, the event year.

The following table reports the descriptive statistics for independent variables of above regressions models.

Table 20

Descriptive Statistics of model components for 52 Germany, French and UK-listed acquirers undertaking share swap deals Between 1 January, 2005 and 31 December, 2015.

Model: $EM_{i,p} = a_0 + a_1 * Deal\ Ratio_{i,p} + a_2 * ROA_{i,p} + a_3 * GROWTH_{i,p} + a_4 * Debt\ Ratio_{i,p} + a_5 * Public\ Dummy_{i,p} + a_6 * Domestic\ Dummy_{i,p} + a_7 * M\&A\_Wave\ Dummy_{i,p} + a_8 * \sum_{j=1}^{2} Country\_Dummies + \varepsilon_{i,p}$

	Mean	Median	Minimum	Maximum	Std. Dev.
Deal Ratio (%)	1.4033	0.5433	0.0028	16.2173	2.8810
ROA (%)	-3.3473	2.0810	-76.8300	69.1300	21.4624
GROWTH (%)	0.6215	0.1476	-1.0000	8.6459	1.5863
Debt Ratio (%)	0.2013	0.1687	0.0000	1.1196	0.2059
Public Dummy	0.6153	1.0000	0.0000	1.0000	0.4912
Domestic Dummy	0.6346	1.0000	0.0000	1.0000	0.4862
M&A_Wave Dummy	0.5576	1.0000	0.0000	1.0000	0.5015
UK Dummy	0.5961	1.0000	0.0000	1.0000	0.4954
French Dummy	0.2692	0.0000	0.0000	1.0000	0.4478

Notes:

All the variables that are contained in the descriptive statistics are from the event year, in which the earnings management occurs. These variables are received by the database of DataStream. Deal ratio is the deal value to the market value (MV) of the acquiring firm's equity. Deal value is the total consideration paid for the target company and is retrieved by the financial analysis desktop of Thomson Reuters Eikon. ROA (WC08326) is the acquiring firm's return on assets. GROWTH is acquirer three-year annualized sales growth in the three years leading to merger announcement. The corresponding code of sales in DataStream is WC01001. Debt Ratio is the total debt (WC03255) to total assets (WC02999) of acquirers. The Public Dummy demonstrates whether targets are public or private-traded firms and it is equal to 1 for publicly traded target firms. The Domestic Dummy demonstrates whether merger and acquisition deals are domestic or cross-border and it is equal to 1 for domestic merger and acquisition deals. The M&A_Wave Dummy demonstrates whether merger and acquisition deals occur during wave periods and is equal to 1 for wave period transactions. UK Dummy and French Dummy included to Country Dummies. UK Dummy is equal to 1 for UK-listed acquirers and French Dummy is equal to 1 for French-listed acquirers.

As shown, the deal ratio ranges between 0.00289 and 16.2173 with an average of 1.40333 and a median of 0.543371. Return on assets of acquirers (ROA) ranges between -76.8300 and 69.1300 with an average of -3.3473 and a median of 2.0810. Three-year annualized sales growth (GROWTH) ranges between -1 and 8.6459 and the average and median level, respectively, is 0.621562 and 0.147605. Debt ratio of

acquiring firms ranges between 0 and 1.11967 with an average and median of 0.201348 and 0.168796, respectively. The public and domestic dummy averages are 0.615385 and 0.634615, respectively. The average level of the wave dummy is 0.557692. The UK dummy report an average of 0.596154 and the French dummy averages 0.269231, something which is logical due to the fact that the total sample includes more UK acquiring companies than Germany or French acquiring companies.

The multivariate analysis, which illustrated above, will be conducted for both discretionary accruals and working capital accruals as a proxy of earnings management.

Using the cross-platform software of Gretl, the results of the multivariate testing, when the dependent variable is the estimated discretionary total accruals, are indicated to the following table.

Table 21

Regression results of multivariate analysis when discretionary total accruals are used as a proxy of earnings management.

Model:$EM_{i,p} = a_0 + a_1 * Deal\ Ratio_{i,p} + a_2 * ROA_{i,p} + a_3 * GROWTH_{i,p} + a_4 * Debt\ Ratio_{i,p} + a_5 * Public\ Dummy_{i,p} + a_6 * Domestic\ Dummy_{i,p} + a_7 * M\&A\_Wave\ Dummy_{i,p} + a_8 * \sum_{j=1}^{2} Country\_Dummies + \varepsilon_{i,p}$

	Coefficient	Std. Error	t-ratio	p-value
CONST	0.093337	0.054245	1.7207	0.0977 *
DEAL RATIO	0.005064	0.006039	0.8385	0.4097
ROA	0.002138	0.001036	2.0636	0.0496 **
GROWTH	−0.004325	0.011600	−0.3728	0.7124
DEBT RATIO	−0.244916	0.128463	−1.9065	0.0681 *
PUBLIC DUMMY	0.060680	0.051178	1.1857	0.2469
DOMESTIC DUMMY	−0.045303	0.047973	−0.9443	0.3540
M&A_WAVE DUMMY	0.034362	0.046754	0.7350	0.4692
COUNTRY FIXED EFFECTS	YES			

Notes:

Results for the multivariate model are based on the estimated discretionary total accruals of 52 German, French and UK publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The multivariate analysis is based in the event year in which the earnings management occurs. Deal ratio is the deal value to the market value (MV) of the acquiring firm's equity. Deal value is the total consideration paid for the target company and is retrieved by the financial analysis desktop of Thomson Reuters Eikon. ROA (WC08326) is the acquiring firm's return on assets. GROWTH is acquirer three-year annualized sales growth in the three years leading to merger announcement. Corresponding code of sales in DataStream is WC01001. Debt Ratio is the total debt (WC03255) to total assets (WC02999) of acquirers. The Public Dummy is equal to 1 for publicly traded target firms. The Domestic Dummy is equal to 1 for domestic merger and acquisition deals. The M&A_Wave Dummy is equal to 1 for wave period transactions. Country Fixed effects contain the country Dummies UK and France. UK Dummy is equal to 1 for UK-listed acquirers and French Dummy is equal to 1 for French-listed acquirers. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.

As shown, the regression multivariate analysis reports a positive coefficient of Deal Ratio, as expected from its descriptive statistics. However, this coefficient fails to be statistically significant (p-value=0.4097>0.1). This evidence differs from this which provided by Erickson and Wang (1999) due to the different methodology which I used.

The coefficient of ROA is positive and statistically significant at the level of 5% (p-value=0.0496). This confirms the theory which states that firms with high profitability may increase management's desire to report higher earnings. Apart from that, this finding is consistent with the evidence of McNicholas (2000) who sated that a positive and statistical significant ROA may characterize firms with high earnings which are likely to have positive shocks to earnings that contain an accrual component.

The coefficient of Debt Ratio is negative and statistical significant at the level of 10% (p-value = 0.0681), despite the fact that the mean and the median of this variable are positive. This result can be interpreted by the study of Bikki Jaggi and Picheng Lee (2002). In essence, the acquiring firms may decrease their earnings through discretionary accruals prior to the announcement of a merger and acquisition deal because they desire to obtain debt restructuring of an existing debt covenant.

Furthermore, this multivariate analysis does not provide evidence of positive relationship between annualized sales growth (GROWTH) and acquiring firm's earnings management, despite the fact that this variable has positive mean and median. Namely, the coefficient of GROWTH is negative but not statistically significant.

Concerning the dummies that are included in the multivariate analysis the results are mixed and not statistically significant.

Particularly, the results indicate that acquirers from Germany, France and United Kingdom engage in earnings management through discretionary accruals to a greater degree when targets are publicly-traded firms rather than when targets are private firms (coefficient of public dummy is equal to 0.06068). This evidence is in contrast to the evidence which provided by the study of Bok Baik et al. (2007) given the small number of acquirers and the targets which I have in the investigation period. Namely, in my study I have 31 publicly-traded targets and 21 privately held targets. On the other side of the coin, Bok Baik et al. (2007) they examined 609 mergers of publicly traded target firms and 848 of privately traded target firms.

The results, also, point out that acquiring firm's earnings management is positively related with cross-border merger and acquisition deals (coefficient of domestic dummy is equal to -0.0453). In essence, the acquirers that contained in my sample manipulate earnings upward to a greater extent when they participate to a cross-border deal rather than when they participate to a domestic merger and acquisition deal.

Moreover, there is evidence that acquiring firm's earnings management is more likely in growth periods than in contraction years, given the fact that the coefficient of the m&a_wave dummy is positive (coefficient of wave dummy is equal to 0.03436). This evidence is consistence with prior studies that indicate that acquirers have less discretion to manipulate earnings during periods of economic crisis given the increased monitoring of auditors, creditors and other stakeholders.

Finally the results of the fixed effect dummies indicate that the Germany-listed acquiring firms engage in earnings management to a greater extent than French and UK-listed acquirers. This evidence is in accordance with the corresponding evidence which provided by the study of Burgstahler et al. (2004). Burgstahler et al. in their study proved that German origin publicly-listed firms engage in earnings management to a greater degree than UK-listed firms.

On the other hand, using estimated working capital accruals as a proxy of earnings management, none of the results are statistically significant. The results of this regression exhibit in the following table.

Table 22

Regression results of multivariate analysis when discretionary working capital accruals are used as a proxy of earnings management.

Model: $EM_{i,p} = a_0 + a_1 * Deal\ Ratio_{i,p} + a_2 * ROA_{i,p} + a_3 * GROWTH_{i,p} + a_4 *$ $Debt\ Ratio_{i,p} + a_5 * Public\ Dummy_{i,p} + a_6 * Domestic\ Dummy_{i,p} +$ $a_7 * M\&A\_Wave\ Dummy_{i,p} + a_8 * \sum_{j=1}^{2} Country\_Dummies + \varepsilon_{i,p}$

	Coefficient	Std. Error	t-ratio	p-value
CONST	0.083346	0.053004	1.5724	0.1284
DEAL RATIO	−0.001801	0.003937	−0.4574	0.6513
ROA	0.001306	0.000888	1.4705	0.1539
GROWTH	−0.005872	0.011557	−0.5081	0.6158
DEBT RATIO	−0.094378	0.06977	−1.3526	0.1883
PUBLIC DUMMY	0.040174	0.034904	1.1510	0.2606
DOMESTIC DUMMY	−0.031869	0.035582	−0.8957	0.3790
M&A_WAVE DUMMY	0.008898	0.036266	0.2454	0.8082
COUNTRY FIXED EFFECTS	YES			

Notes:

Results for the multivariate model are based on the estimated discretionary working capital accruals of 52 German, French and UK publicly listed firms undertaking share swap merger and acquisition deals during the period 2005-2015. The multivariate analysis is based in the event year in which the earnings management occurs. Deal ratio is the deal value to the market value (MV) of the acquiring firm's equity. Deal value is the total consideration paid for the target company and is retrieved by the financial analysis desktop of Thomson Reuters Eikon. ROA (WC08326) is the acquiring firm's return on assets. GROWTH is acquirer three-year annualized sales growth in the three years leading to merger announcement. Corresponding code of sales in DataStream is WC01001. Debt Ratio is the total debt (WC03255) to total assets (WC02999) of acquirers. The Public Dummy is equal to 1 for publicly traded target firms. The Domestic Dummy is equal to 1 for domestic merger and acquisition deals. The M&A_Wave Dummy is equal to 1 for wave period transactions. Country Fixed effects contain the country Dummies UK and France. UK Dummy is equal to 1 for UK-listed acquirers and French Dummy is equal to 1 for French-listed acquirers. Significant results are marked in bold: *denotes significance at the 10% level,** denotes significance at the 5% level,*** denotes significance at the 1% level.

As shown, the coefficient of ROA is also positive (is equal to 0.0018) by using working capital accruals as a proxy of earnings management, as it was in the case of discretionary accruals, but fails to be statistically significant. The coefficient of Debt Ratio is again negative (is equal to -0.09437) but it does not provide strong evidence that acquirers may manipulate earnings upward in the year prior to a merger and acquisition deal in the case they want to obtain restructuring of an existent debt covenant. Finally, the results of the dummies' coefficients end up to the same conclusions as previously, when I took into account discretionary accruals as a proxy of earnings management.

5. Conclusion

The objective of this study is to investigate whether acquiring firms manipulate earnings ahead of share-financed mergers and acquisitions. The analysis was based on a sample of 52 publicly traded firms participating in share swap acquisitions during the period 2005-2015. The sample contains firms from three different nationalities. Namely, in the sample included seven German-listed acquiring firms, fourteen French-listed acquiring firms and thirty-one UK-listed acquiring firms. In order to investigate whether these acquirers engage in earnings management prior to the announcement date of a merger and acquisition deal, I employ the Original Jones model (1991) in each sample firm, based on discretionary and working capital accruals obtained from cash flow statement. Each sample firm has been audited for autocorrelation and heteroskedasticity problems so as to avoid conducting inefficient and biased estimates. With the view to conclude to substantial and significant results I separate my total sample in three parts depended on the nationality of acquiring firms.

The results provide weak evidence of manipulating earnings through discretionary and working capital accruals in the case of German-listed acquiring firms due to the small number of German acquirers in the sample period. The examination of French-listed acquiring firms provides strong evidence of manipulating earnings through working capital accruals, something which confirms the theory that firms do not use depreciation as an instrument of earnings management due to the fact that it is more predictability, visibility and rigidity. The analysis of UK-listed acquiring firms provides strong evidence of income increasing through discretionary accruals prior to the announcement date of a merger and acquisition deal. Examination of the total sample indicates that acquiring firms manipulate earnings upward in the period prior to a merger and acquisition deal through discretionary and working capital accruals. Namely, the estimates of discretionary and working capital accruals are statistically significant at the level of 5%.

Further investigation has been conducted in the total sample with the view to end up to the factors that are related with acquiring firms' earnings management. This multivariate analysis contains variables which correlated with the incentives of earnings management, the characteristics of merger and acquisitions deals and the macroeconomic conditions in acquirers' environment. The results indicates that incentives of acquiring firms to manipulate earning upward through discretionary accruals constitutes an increasing function of their performance measured by the return on assets which have in the year preceding the announcement of a stock for stock merger and acquisition deal. Apart from that, this analysis provide strong evidence that acquiring firms may resort to income decreasing through discretionary accruals prior to a merger and acquisition deal in the case of which they desire to obtain debt restructuring of an existing debt covenant. Finally, it is provided weak evidence which confirms that acquirers' earnings management is decreased during periods of economic stress given the increased monitoring of auditors, creditors and other stakeholders.

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