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Sara Trucco

Financial Accounting

Development Paths and Alignment to Management Accounting in the Italian Context

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"To my family"

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Chapter 1
Introduction

1.1 A Brief Overview of the Book

The manuscript seeks to analyze the development paths of Financial Accounting (FA) and its consequent alignment to Management Accounting (MA).

Specifically, it aims at exploring the relationships between these two disciplines, in particular, the antecedents and consequences of a possible alignment of FA to MA, from the viewpoint of Italian managers. The analysis was based on a sample of Italian managers (controllers and financial accountants) working for both publicly held and non-publicly held firms, both large and small/medium-size companies.

FA is a broad research field examining the whole process of communication between managers and firms' stakeholders, such as auditors, information intermediaries, investors, and so forth. Furthermore, FA relates to the effects produced by regulatory regimes on the overall information process (Libby et al. 2002: 775). The disclosure of FA information is useful for every kind of corporate stakeholder (both internal and external ones), since it allows them to understand the application of the accounting standards and, especially, the overall corporate performance (Healy and Palepu 2001; Graham et al. 2005; Lambert 2007). Therefore, from an informational perspective, FA should provide decision-useful information (Beaver 1989; Staubus 2000, 2004; Eierle and Schultze 2013).

The FA topic could be analysed from two different perspectives: an objective one and a subjective one. The former is related to the analysis of the objectives of FA and the relative procedures and activities managers have to follow in preparing and, consequently, disclosing corporate information in order to satisfy external goals; the latter is related to the analysis of the managers' role and the activities of those involved in FA procedures and practices. Both perspectives are taken into consideration in the present work.

Specifically, for the purpose of the present work, FA information, from an objective standpoint, is intended in a broad sense, and thus, could be defined as the product of corporate accounting and external reporting systems that measure

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and disclose, mandatorily and voluntarily, quantitative and qualitative data concerning the financial position and the overall performance of the firm (Bushman and Smith 2001).

On the other hand, MA could be defined as a part of the internal control system. In an academic and broader meaning, the internal control could be defined as a set of activities, reporting and individuals, aimed at achieving the overall performance objectives, while guaranteeing the proper use of internal resources in the business processes; the compliance with rules and regulations, and, the production of reliable FA disclosure (Bruni 1996; Coopers and Lybrand 1997; Hinna and Messier 2007; D'Onza 2008; Marchi 2008). Specifically, MA is a set of information flows useful in supporting management in the decision-making process, in financial performance planning, in cost accounting, and in profitability improvement (Chadwick 1993). The purpose of MA is to favour the achievement of economic efficiency in the business management, i.e. the strengthening of short and medium/long-term profitability. MA is thus relevant for defining forecasts and criteria for calculating costs, measuring internal performance and preparing internal reports useful in interpreting and explaining to the board of directors the business performance.

The two areas of FA and MA represent together the accounting; the existence of FA and MA information tends to create two different circuits of information within a firm (Popa-Paliu and Godeanu 2007; Taipaleenmäki and Ikäheimo 2013). Even if some authors have pointed out that, in academia and from a theoretical viewpoint, there is a deep distinction between FA and MA, they have highlighted that there are some practical overlapping areas between the two, which need to be explored and identified (Lambert 2007).

The starting point of the present book is the identification of the three levels of analysis of FA information and their evolutionary paths. The three levels of analysis are the following: (1) mandatory and voluntary disclosure, (2) financial and non-financial information, and (3) forward-looking and historical information. Even if the three levels of analysis are identified, it is important to specify that they are not independent of one other, and that the relative boundaries are not easily detected and defined. The relative evolutionary paths could be explained by analysing theories mainly based on economic assumptions, such as agency theory, signalling theory and legitimacy theory, and based on social assumptions, such as institutional theory, which is particularly suitable in explaining development paths and changes within an organization, which depend, for instance, on the features of corporate governance and culture.

Faced with the proliferation of voluntary disclosure in terms of forward-looking and non-financial information, it is becoming more and more relevant to set new control activities and adopt new tools in order to verify the reliability of overall FA disclosure.

In 2008, Hemmer and Labro first expressed their doubts and concerns about the fact that the previous literature treated FA and MA as different and separate fields of research. In their work, they showed that financial reporting is able to affect the quality of MA, thereby highlighting that these two areas are not independent, since FA and MA have similar purposes. As a matter of fact, FA encompasses control and decision-making just as MA does. Specifically, FA control regards the fact that management is accountable to stakeholders (stewardship accounting), whereas FA decision-making regards the decisions taken by investors on the basis of disclosed information (Hemmer and Labro 2008). MA control is composed of planning, administrative and cultural controls, and compensation systems, whereas MA decision-making is composed of strategic and operational decisions (Zimmerman 2001; Malmi and Ikäheimo 2003; Malmi and Brown 2008). They also pointed out that the need for the convergence of FA and MA is particularly high for those companies oriented toward investors, such as companies that have adopted IAS/IFRS.

Furthermore, the literature review reveals that the forward-looking perspective of FA could lead to forward-looking MA, and vice-versa, thereby producing an interesting virtuous circle between FA and MA (see among others Taipaleenmäki and Ikäheimo 2013). The new financial standards (IAS/IFRS) have also contributed to the evolution of FA information from the backward-looking historical perspective to a forward-looking fair value one; in this framework, the internal managerial perspective became relevant even for accounting standards (Ikäheimo and Taipaleenmäki 2010).

In the end, the aforementioned development paths that involved the overall FA flow of information have led to some relevant changes to MA, thus providing promising initial evidence about the convergence between FA and MA (Ansari and Euske 1995). While recent studies have demonstrated the need for convergence between the two above-mentioned areas, some doubt remains about the possible success of this integration (Ikäheimo and Taipaleenmäki 2010).

Inspired by these recent considerations, current research has proposed possible theoretical explanations for the convergence of FA and MA. As a matter of fact, a recent literature stream has theorized the convergence of MA and FA, by taking advantage of Information Technology (IT) (Taipaleenmäki and Ikäheimo 2013). Some authors have argued that IT represents a facilitator, motivator and enabler for such convergence.

The present work is therefore consistent with previous studies that have revealed the need for a convergence between FA and MA, contributing to the call for more research on the possible success and consequences of such integration (Quagli 2011; Zambon 2011; Taipaleenmäki and Ikäheimo 2013). Furthermore, this work extends considerations developed by previous authors (Hemmer and Labro 2008; Ikäheimo and Taipaleenmäki 2010; Weißenberger and Angelkort 2011; Taipaleenmäki and Ikäheimo 2013) by taking into account both publicly held and non-publicly held firms in Italy.

Moreover, this work is consistent with those of other authors who have identified a new era in which MA should serve as more than simply a borrower of data to FA; in fact, Zambon used the following term to define the current era: "*managerialisation of financial reporting*" (Zambon 2011; see also DiPiazza et al. 2006).

Interesting considerations could arise from the analysis of the relationships between the integration of accounting systems (which synthesizes the convergence process between FA and MA) and the other research variables in the present work, thereby answering the research question "*What is the Italian managers' perception of the alignment between financial and management accounting?*".

As a matter of fact, although some recent studies have theorized the convergence of these two fields of study, few authors have investigated the managers' perception of the relationship between FA and MA and the antecedents and benefits that convergence could bring to a company. Moreover, this gap is particularly evident in the Italian context. To answer this research question and test the research hypotheses, pilot interviews and an online survey of Italian top managers were carried out. The pilot interviews were manually analysed, whereas, the survey data was analysed through Partial Least Squares-Structural Equation Modeling (PLS-SEM). This combined method of interviews and survey could allow the researcher to understand managers' perspectives, highlighting different viewpoints of controllers and financial accountants about the relationships between FA and MA and about the other issues investigated in the present work. This methodology is particularly useful in evaluating perceptions and interpretations of social actors (Colwyn Jones 1992), which reflect the participants' experience in business activities (Colwyn Jones and Dugdale 2001; Giddens 2013). Furthermore, the joint use of both research methods allows the author to overcome possible weaknesses and limitations of the single research method. The PLS-SEM was performed for the whole dataset of answers from the 107 managers. To provide more perspective on the results, the whole dataset of respondents was divided on the basis of the respondents' role; the same path analysis was also performed for the other two datasets (33 of the respondents were financial accountants and 74 controllers).

Empirical results (from both the survey questionnaires and the pilot interviews) in the Italian setting contribute to the international and Italian literature on this topic, thereby exploiting managers' perceptions as follows: (1) by identifying antecedents and consequences of the integration of FA and MA; (2) by exploring the relationship between management satisfaction with the overall quality of FA and the overall quality of MA; and (3) by analyzing potential differences between the viewpoints of controllers and financial accountants.

1.2 Theoretical Contributions of the Present Work

From a theoretical standpoint, the present work contributes to:

– shedding some light on the current situation about the process of alignment of FA to MA in Italy. The frequency distribution for the components of the integration of the accounting system (that is, the research variable which summarizes the process of convergence) demonstrates that Italian managers (both controllers and financial accountants) do not yet perceive a full and deep alignment between the two areas, since values are not so high. This reveals that this process of alignment in large and Small and Medium Enterprises (SMEs) in the Italian context, may currently be in a promising initial phase;

– providing empirical evidence in the Italian context by finding antecedents and consequences of the alignment of FA to MA. Even if the theoretical argumentation in supporting these issues is increasing, the topic is quite recent and few empirical studies have been undertaken to test the antecedents and consequences of the integration of the accounting system. This lack of empirical studies could be due to the difficulties in collecting data that demonstrates such integration in firms. No data on this topic is available on free database; therefore studies can be carried out based on surveys and detailed interviews (Weißenberger and Angelkort 2011). Empirical evidence regarding the antecedents has revealed that: (1) the level of ERP integration positively affects the level of integration of the accounting system (the previous research is consistent with this finding. See, among others: Innes and Mitchell 1990; Taipaleenmäki and Ikäheimo 2013), and (2) the application of IAS/IFRS positively affects the level of integration of accounting systems only for controllers (for similar results see also Marchi et al. 2008; Procházka 2011; Quagli 2011; Zambon 2011; Taipaleenmäki and Ikäheimo 2013). With regard to the consequences, the results demonstrate that integration of the accounting system has a direct effect on the perceived quality of FA (see also Jones and Luther 2005), whereas no direct correlations are found between the integration of the accounting system and perceived quality of MA. However, even though no direct paths are found between the level of integration of the accounting system and perceived quality of MA, controllers underlined that management satisfaction with the quality of FA mediates the relationship between the integration of accounting systems and management satisfaction with the quality of MA. This result is consistent with the results obtained by Weißenberger and Angelkort (2011);
– providing interesting observations on the relationship between the quality of FA and the quality of MA from the perspective of top managers. Specifically, considering the whole database, the level of perceived quality of FA positively affects the level of perceived quality of MA, even though no correlations are found in the other two levels of analysis (controllers and financial accountants). This result contributes to that part of the literature that theorizes that FA rules may bring about changes or improvements in MA (Cinquini and Tenucci 2011; Quagli 2011; Zambon 2011), even if there is still need for further investigation;
– analyzing potential differences between the viewpoints of controllers and financial accountants. Specifically, controllers perceive that the level of integration in ERP within a company is positively correlated to the quality of MA (see, among others: Maccarone 2000; Granlund and Malmi 2002; Sangster et al. 2009; Kallunki et al. 2011), whereas financial accountants do not have this perception. Controllers perceive that the adoption of IAS/IFRS increases the level of integration of the accounting system, whereas financial accountants do not have this perception. Moreover, financial accountants perceive that the adoption of IAS/IFRS could be useful in improving both the quality of FA and the quality of MA, whereas controllers feel otherwise (on this topic see, among others: Hemmer and Labro 2008; Ikäheimo and Taipaleenmäki 2010; Jermakowicz 2004; Jones and Luther 2005; Marchi et al. 2008);

– providing fruitful considerations on the mediating role of the integration of the accounting system. Empirical findings (for the controller database) revealed that the integration of the accounting system plays a mediating role between the level of integration in ERP and the perceived quality of FA. In a similar vein, the integration of the accounting system also mediates the relationship between the level of integration in ERP and the quality of MA as perceived by controllers. Furthermore, the integration of the accounting system also appears to mediate the relationship between IAS/IFRS adoption and the quality of FA as perceived by controllers.

1.3 Practical Contributions of the Present Work

Firms can benefit from the present study in several ways: it can support managers in choosing the level of integration of the accounting system, taking into account the possibility of exploiting endogenous factors to increase the level of convergence between FA and MA, and it can lead to a better understanding of the benefits the alignment of FA to MA could bring to the company.

Firms could also benefit from the present study in defining a new managerial profile to manage information flows among different areas in the firm, in particular in concurrently managing accounting and managerial information and tools.

Finally, the present work lays the groundwork for new frontiers of research and teaching in the Italian and international contexts in general, as previously theorized by some authors (Quagli 2011; Zambon 2011). From a research standpoint, it could be interesting to develop research groups and journals on this topic; and from a teaching standpoint, to revisit academic programs and introduce the topic of convergence in both FA and MA courses. In Italy in particular, where the division between the two fields of study was rooted in the Italian tradition of Business Administration, course content must not be overhauled, though it could be interesting to point out the relevance of considering FA and MA as an unique, vast and complex discipline with interesting relationships to identify and analyze.

1.4 Structure of the Book

The remainder of the book is organized as follows.

Chapter 2 will focus on the development paths which have affected FA, discussing the levels of analysis of FA information and economic and social theories which explain the development paths of FA from an external and internal perspective, respectively.

Chapter 3 deals with the analysis of the internal control system within a company, its features and components, introducing and deepening the issue of MA. Furthermore, Chap. 3 provides the first promising link between internal control and FA, analysed from the point of view of academics and professional associations, pointing out a virtuous circle between the forward-looking perspective of FA and the forward-looking MA, with a special focus on the Italian setting.

Chapter 4 analyzes the drivers of the alignment of FA to MA, underlining that both IAS/IFRS and IT are relevant issues in the process of this convergence.

Chapter 5 presents the development of the research hypotheses as well as the definition of the research design, the preliminary results from the pilot interviews, and the empirical findings from the survey.

Chapter 6 presents some final considerations along with a discussion of the theoretical and practical contributions of the present work.

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Chapter 2
Financial Accounting: Development Paths

2.1 Introduction

Financial Accounting (FA) has undergone radical changes during recent decades, which have led both academics and professional associations to attempt to identify them and the possible explanations for these development paths.

The following sections are organized as follows. Section 2.2 proposes a possible FA framework, identifying two main perspectives: an objective one and a subjective one. Section 2.3 proposes three levels of analysis with regard to the development paths of FA. Section 2.4 discusses economics theories which explain the development paths of FA from an external perspective. Finally, Sect. 2.5 discusses social theories, which may be used to explain the FA development paths from an internal perspective.

2.2 Financial Accounting: A Possible Framework

FA is a broad research field that focuses on corporate information. Specifically, this field of study examines the whole process of communication between managers and firms' stakeholders, such as auditors, information intermediaries, investors, and so forth. Furthermore, FA relates to the effects produced by regulatory regimes on the overall information process (Libby et al. 2002).

For many years, scholars have contributed to developing techniques, practices, processes and scientific researches around this topic. Recent literature about this topic has mainly focused on managers and auditors' reporting practices, the quality, the usefulness and the value relevance of corporate disclosure, financial reporting regulation differences across countries, and the multiple effects of the adoption of the International Financial Reporting Standards (IFRS).

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Professionals and managers have further contributed to defining standards and routine procedures to prepare and disclose corporate information.

Finally, universities throughout the world have courses on FA topics. University courses are mainly based on the process of preparation of financial statements, the measurement systems of balance sheet items, and the external and internal auditing required to verify the reliability of corporate disclosure and to satisfy all stakeholder needs.

The following sections will examine the topic of FA from two different perspectives: an objective one (Sect. 2.2.1) and a subjective one (Sect. 2.2.2). The former perspective is related to the analysis of the objectives of FA and the relative procedures and activities which managers have to follow in preparing and, consequently, disclosing corporate information in order to satisfy external purposes; whereas the latter is related to the analysis of the managers' role and the activities of those who are involved in FA procedures and practices.

2.2.1 Financial Accounting: An Objective Perspective

The literature streams on FA have used several terms to identify corporate information, which is the heart of FA. As a matter of facts, terms like financial reporting, financial statement, regulatory filing, annual report, corporate reporting, business reporting and corporate disclosure, are widely used amongst scholars.

Although these terms are quite similar, some peculiarity may arise depending on the context in which these words are used. For instance, financial reporting, financial statement and regulatory filing are generally used to identify mandatory documents that companies have to disclose; whereas annual report, corporate reporting, business reporting and corporate disclosure are used to identify a wider process of communication between managers and external stakeholders (Allegrini 2003; Greco 2010). Nevertheless, the division between the two groups of words is not so clear and well-defined in the literature, and scholars often use the aforementioned words with interchangeable meaning.

With regard to the first narrow meaning, firms are indeed obliged to disclose information through financial reporting or the financial statement, which are traditionally useful in reporting and disclosing business activities that regard a specific accounting period (Onida 1940; Saraceno 1941; De Dominicis 1950; Ferrero 1959; Caramiello 1987).

Although this topic has been dealt with by a lot of studies over the years, all academics agree that the main purpose of this document is to define the income and the composition of firms' capital at the end of the year or at the end of a specific accounting period (Passaponti 1990; Cattaneo and Manzonetto 1992).

From an international professional viewpoint, the standards of financial reporting are set by professional associations like the FASB (Financial Accounting Standard Board) and IASB (International Accounting Standard Board). The FASB, in "Statement of Financial Accounting Concepts" n. 1, stated that: "*The primary focus of financial reporting is information about earnings and its components*" (FASB 1978).

The IASB stated that "*The objective of financial statements is to provide information about the financial position, performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions*" (IASB 2010a).

Furthermore, the joint project developed by the FASB and IASB sets out the main aim of financial reporting has providing relevant information for investors, emphasizing market values and cash flow forecasts.[1] The professional definitions of financial reporting are thus consistent with the academic viewpoints, mentioned above. These professional associations have defined a set of rules and standards, called the International Accounting Standard (IAS) and International Financial Reporting Standard (IFRS), useful in preparing mandatory disclosure within a firm. These relevant changes arise from the harmonization process, which has become so relevant and broadly discussed amongst scholars and professional associations; since 2005, the financial reporting of all listed firms was indeed affected by the introduction of new evaluation methods for the balance sheet items.[2]

The IAS/IFRS disclosure has thus represented one of the most important changes in mandatory disclosure, especially for listed firms (Ashbaugh and Pincus 2001; van Tendeloo and Vanstraelen 2005). In the end, it was introduced to promote a homogeneous language in financial reporting across countries, in order to better satisfy investor goals. Nowadays, even firms that are not obliged to adopt IAS/IFRS can choose to use them in the preparation of their financial reporting; this decision could depend on the particular firm and country (Cuijpers and Buijink 2005). Firms, which voluntarily or compulsorily adopted IAS/IFRS have financial reporting particularly oriented to the market and to the future. The IAS/IFRS define flexible schemes of financial reporting that could be changed by firms' managers, thereby increasing the discretion of those who preparer the financial reporting (Bauer 2007). According to the framework set forth by the IASB, the information in financial reports should be understandable, relevant, reliable and comparable, thereby highlighting the relevance given to the quality of the companies' information disclosed to stakeholders.

The adoption of IAS/IFRS by firms has been analysed by several research in order to explore its implications on the nature of income and capital of firms (Ashbaugh 2001; Barth et al. 2008).

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[1] According to the IASB and FASB's framework, the major objective of financial reporting is to provide information "*that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity*" (FASB 2010; IASB 2010a).

[2] The International Accounting Standards were issued by the International Accounting Standards Committee (IASC) till 2002, whereas the International Financial Reporting Standards were issued by the American Institute of Certified Public Accountants (AICPA) in 2007. Non-listed firms may continue to adopt local GAAP.

In the Italian context, the financial reporting was set by national standards and by laws identified in the Civil Code.[3] The Italian regulatory framework traditionally was substantially different from the IAS/IFRS framework. As a matter of fact, in the Italian setting, the concept of prudence is traditionally pivotal and primary in preparing the financial reporting, whereas the IAS/IFRS do not assign a primary role to the prudence concept (Melis and Congiu 2006; Lacchini and Trequattrini 2007). Therefore, some difficulties arose after the mandatory introduction of IAS/IFRS in listed companies.

For the purposes of this work, the second broad meaning of corporate information was employed.

Within this framework, FA information is thus the product of corporate accounting and external reporting systems that measure and disclose quantitative and qualitative data concerning the financial position and the overall performance of the firm (Bushman and Smith 2001).[4] According to this perspective, FA information is useful in providing direct and indirect inputs to corporate control mechanisms. Direct inputs concern the fact that through this kind of information, managers and stakeholders at large are able to verify the firms' financial conditions, whereas indirect inputs are obtained from the fact that FA information could support the information contained in firms' stock prices (Bushman and Smith 2001; Bushman et al. 2004). However, FA information should be mainly aimed at satisfying the needs of different stakeholders in the firm. The nature of stakeholder interests tends to be a source of conflict; therefore, it is relevant to satisfy each different class of interest (Amaduzzi 1949). Finally, this information flow is a language that should be known by both sender (company) and final users (stakeholders), and represents the final product of the conversion process of economic facts into figures, symbols and words. Consequently, the final message is decrypted by users of information and is subject to a process of interpretation by them. Therefore, it could be possible that the result of the communication process is different from that intended by the company and by different stakeholders (Ceccherelli 1931, 1961; Giannessi 1960; Catturi 1987).

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[3] The Civil Code defines: (1) general principles and postulates of financial reporting (art. 2423 and 2423 bis), (2) documents which compose the financial reporting (art. 2423 ter and 2428 bis), and (3) evaluation principles (art. 2426). Specifically, art. 2423 ter of the Civil Code states that the financial reporting represents a unique complex of documents, which are as follows: balance sheet, income statement and notes to the accounts. Furthermore, financial reporting must be clear and represent the true and correct patrimonial, financial and economic situation of the firm.

[4] Bushman and Smith defined the concept of FA in the following way: "*We define the governance role of financial accounting information as the use of externally reported financial accounting data as a control mechanism that promotes the efficient governance of corporations*." Scholars also stated: "*Financial accounting information is the product of corporate accounting and external reporting systems that measure and publicly disclose audited, quantitative data concerning the financial position and performance of publicly held firms. Financial accounting systems provide direct input to corporate control mechanisms, as well as providing indirect input to corporate control mechanisms by contributing to the information contained in stock prices*" (Bushman and Smith 2001).

According to Beyer et al., FA information plays two pivotal roles in the economy. The first role regards the ex-ante role of information, that is, the ability of information to allow investors and capital providers to evaluate the return of investment opportunities. Generally, in this context, investors and capital providers have less information than firm managers, since they are outsiders. Managers could thus exaggerate the firms' economic results in order to attract capital, thereby generating "lemons problems".[5] The second role of information regards the ex-post role of information, that is, the ability of information to allow capital providers to define the corporate governance system and to monitor the use of capital resources (Beyer et al. 2010). More in general, FA information is used by firms as a mechanism for addressing market imperfections and thus reducing information asymmetry between managers and investors (Watts and Zimmerman 1990, 2006; Christie and Zimmerman 1994; Bushman and Smith 2001; Khanna et al. 2004).

Therefore, FA information, whose main purpose is to meet the information requirements of external stakeholders, also fulfils the internal need of a company to correctly disclose information to the market about its performance, thereby reducing uncertainties for investors and, consequently, the cost of capital (Lambert and Verrecchia 2014). This happens because public information about a company is assumed to be significant for the decision-making process, since it enables the final users to use FA information correctly. In order to achieve this objective, internal managers play a crucial role in deciding which type and amount of FA information to disclose externally. For instance, a relevant and mandatory document in which managers can use direction in disclosing FA information could be considered the Management Discussion and Analysis (MD&A), useful in highlighting the trend of the business activities, the description of the firm's business, and the results of business operations[6] and reducing the information asymmetry among managers and investors (Boesso and Kumar 2007). MD&A is therefore a firm's report on financial and even non-financial disclosures (Cole 2005). This could bring about important differences in FA information among companies.

Furthermore, the FA flow of information naturally changes among companies in accordance with several factors, such as the firm's size,[7] the industrial sector, the

[5] Lemons problems and relative possible solutions are discussed in Sect. 2.4.2.

[6] The MD&A first appeared in 1968 in the U.S. as an element of the Guides for Preparation and Filing of Registration Statements (SEC 1968). Despite this date, it became a mandatory document of financial reporting in 1974 (SEC 1974). Tavcar stated that the MD&A is the most read and relevant document regarding corporate information (Tavcar 1998). Furthermore, it is the main document on which financial analysts usually rely, when they prepare their reports (Knutson 1992; Rogers and Grant 1997). According to the SEC, the MD&A has three main aims: (1) to provide a narrative explanation of a company's financial reporting that enables investors to see the company through the eyes of management, (2) to enhance the overall financial disclosure and provide the context within which financial information should be analyzed and, (3) to provide information about the quality of, and potential variability of, a company's earnings and cash flow (SEC 2003a).

[7] For instance, small and non-listed firms have, in general, fewer regulations with regard to corporate disclosure than the medium/large-size listed ones.

regulation, the firm's resources and knowledge, the efficiency of the financial market, the presence or the absence of financial analysts and, finally, the historical and cultural features of the company (Ali and Hwang 1999; Ball et al. 2000; Corvi 2007). Finally, differences among countries could affect the FA reporting outcomes (Francis et al. 2003; Leuz 2003; Bushman et al. 2004).

All the above-mentioned factors could thus produce their effects on the mandatory documents, if the regulation allows managers to have a certain degree of discretion in disclosing information (as in the MD&A), and on the voluntary side of the FA flow of information.[8]

2.2.2 Financial Accounting: A Subjective Perspective

From a subjective viewpoint, FA information is managed by people involved in the processing, preparation and communication of corporate disclosure. These managerial positions are different depending on whether or not a company is publicly held or non-publicly held. Indeed, in the former kind of company, the aforementioned managerial positions are mainly covered by the Chief Executive Officer (CEO), the Chief Financial Officer (CFO), and the Investor Relator (IR).

The CEO is generally the most senior corporate officer[9] and typically reports to the board of directors. The CEO should have a collective organizational vision oriented toward the greater value of the firm (House and Aditya 1997). He/she also approves the corporate disclosure.

The CFO is responsible for evaluating firms' financial risks and for record-keeping. According to Gibbins et al., CFOs "*are managers responsible for the financial statements used by markets and others*" (Gibbins et al. 2007). They tend to prepare FA information consistent with external goals and formal rules, and their relationships with the other managerial positions depend on the organizational structure within the company (Mintzberg et al. 1998; Thompson and Strickland 1998) and on rules and regulations (Institute of Corporate Directors 1992; Leighton and Thain 1997).

The IR is an intermediary between the firm and the financial community (Kirk and Vincent 2014). This managerial function is defined by Marston in the following way: "*Investor relations can be defined as the link between a company and the financial community, providing information to help the financial community and investing public evaluate a company*" (Marston 1996).

The NIRI (National Investor Relations Institute 2011) argued that the IR should be viewed as a "Chief Disclosure Officer"; moreover the NIRI (National Investor Relations Institute 2004) stated that his/her main relationships are with analysts and

[8] For additional insights into voluntary disclosure, see Sect. 2.3.1.

[9] The CEO could thus be considered as the leader of an organization (Boal and Hooijberg 2000; Hunt 2004).

institutional stakeholders. These relationships with external stakeholders are realized through the organization of webcasts, conference calls, one-on-one meetings and presentations (Francis et al. 1997; National Investor Relations Institute 2004; Bushee et al. 2004, 2011). The IR function became more relevant for academic and professional studies after the corporate scandal (e.g. Enron, WorldCom, Global Crossings), since the external understanding of FA information became increasingly relevant (Laskin 2009).

In the latter kind of company mentioned at the beginning of this section, the managerial positions involved in the FA processes are covered by the CEO and CFO, as in the publicly held firms, whereas the IR is not required by law. Furthermore, in non-publicly held firms as well as in publicly held ones, other relevant roles may be involved in the communication process, such as the administrative and/or accounting director and/or a managerial function directly responsible for the companies' disclosure.

2.3 The Role of Voluntary, Non-financial and Forward-Looking Disclosure in Financial Accounting Information

From the FA literature review, it is possible to identify an interesting classification of corporate information. In detail, this section presents three levels of analysis of FA information and the relative evolutionary paths. The three levels of analysis are the following: (1) mandatory and voluntary disclosure, (2) financial and non-financial information, and (3) forward-looking and historical information.

However, these three levels of analysis are not independent of one other, and the relative boundaries are not easily detected and defined. As a matter of fact, mandatory disclosure could encompass financial and non-financial information as well as forward-looking and historical information. The same considerations could arise from the side of voluntary disclosure. Furthermore, the financial as well as non-financial information contained in mandatory disclosure could be forward-looking and/or historical information. Similar considerations could arise from the side of voluntary disclosure. A possible representation of FA information and its levels of analysis is shown in Fig. 2.1.

As shown in the previous section, FA information is aimed at satisfying a number of different stakeholders, and it should be disclosed to improve the consensus of the firm among such stakeholders (Watts and Zimmerman 1990). In the end, companies attempt to improve their reputation or to reduce reputation risk through a reliable FA flow of information (Anderson 1978; Kapardis and Anderson 1995; Root and Grumman 1998). The sections below analyze the three levels mentioned above, especially highlighting the theoretical background in supporting the development paths of each of them.

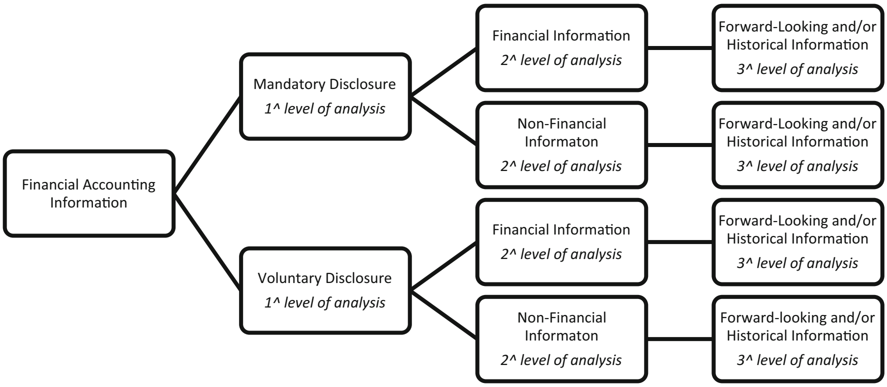

Fig. 2.1 Financial accounting information and its levels of analysis (*Source*: author's presentation)

2.3.1 Mandatory and Voluntary Disclosure: First Level of Analysis

With regard to the first level of analysis (mandatory and voluntary disclosure), the mandatory one refers to the corporate disclosure as mandated by legal requirements and audited by external parties (audit firms), whereas the voluntary disclosure regards corporate disclosure which goes beyond the legal requirements (Meek et al. 1995).[10]

In terms of mandatory or audited disclosure, companies must in fact provide disclosure through regulatory filings, which are usually: income statements, balance sheets, notes to the accounts and MD&As (Healy and Palepu 2001). The voluntary disclosure is, instead, an additional disclosure, generally useful in reducing information asymmetry between managers and investors (Ball et al. 2012). However, voluntary disclosure can be considered as the complement and not the substitute of mandatory disclosure (Ball et al. 2012). As shown in Sect. 2.2.1, mandatory disclosure has radically changed after the introduction of the IAS/IFRS. The IAS/IFRS were introduced in order to favour the harmonization of accounting processes and financial language among different countries. According to a literature stream, this process may facilitate the diffusion of new and innovative evaluation logic, new accounting techniques and new rules of recording data (Marchi et al. 2008). This new kind of business information usually requires strong relationships and collaboration among different managerial positions and between general ledger systems and cost accounting systems (Marchi et al. 2008). Some examples of relevant changes introduced by international GAAP are related to the demand in

[10] The Financial Accounting Standard Board has described voluntary disclosures as information outside of the financial statements, not explicitly required by accounting rules or standards (FASB 2000).

discounting cash flow in order to evaluate some balance sheet items (such as IAS 17), which leads to new actuarial techniques; to the introduction of new evaluation logic (such as fair value in IAS 2 and IAS 39), and to the use of internal reporting to produce external information (IAS 14).[11] The IAS/IFRS also require firms to disclose forward-looking information which should be monitored in the subsequent annual reports (IAS 36). The accuracy and reliability of this type of mandatory information is verified by external parties (audit firms), which are responsible for the professional judgement given to FA information.[12]

As shown in the Fig. 2.1, the other side of the first level of analysis of FA information is represented by voluntary disclosure. The issue of voluntary disclosure has been studied by several scholars for many years (Verrecchia 1983; Admati and Pfleiderer 2000; Core 2001; Healy and Palepu 2001; Graham et al. 2005; Bamber et al. 2010; Allegrini and Greco 2011; Bens et al. 2011; Guidry and Patten 2012; Bischof and Daske 2013; Ben-Amar and McIlkenny 2014).

According to this broad stream of literature, firms tend to undertake voluntary disclosure in the form of management forecasts, press releases, conference calls, presentations and websites to provide greater clarity for investors and thereby, reducing information asymmetry between the company and stakeholders (Verrecchia 1983), the cost of raising equity capital (Botosan 1997; Shroff et al. 2013) and the cost of debts (Sengupta 1998). The increase of voluntary disclosure may reduce information risk, but only if the disclosed information is reliable and accurate (Fombrun et al. 2000; Bebbington et al. 2008). However, some difficulties could arise from the fact that voluntary disclosure is not audited by third parties; thus it could be difficult to assure the reliability of this kind of FA information. The consequences of an unreliable voluntary disclosure are negative for firms, since some authors have demonstrated that if stakeholders discover a firm which discloses unreliable information, then they are likely to consider as unreliable all information subsequently disclosed by the firm (Fama and Miller 1972; Jensen and Meckling 1976).

Therefore, a relevant issue for managers is the need to build credibility; to do so, managers prefer to anticipate bad news to the market, especially to avoid lawsuits (Graham et al. 2005). Furthermore, bad news could be even useful in increasing the firm's credibility and the informativeness of voluntary disclosure, such as in the form of conference calls, if earnings announcements contain negative news (Matsumoto et al. 2011).

Despite these considerations, some scholars have demonstrated that if the mandatory disclosure is reliable and credible, even the non-verifiable voluntary disclosure seems to be perceived as credible by investors and stakeholders at large

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[11] Changes due to the adoption of the IAS/IFRS have generated a greater market value orientation. In particular, Marchi et al. highlighted that the IAS/IFRS carried out some relevant changes in internal controls and in organizational structures and processes (Marchi et al. 2008).

[12] Auditors have the responsibility of issuing an audit opinion in order to assure that financial reporting gives a true and fair view in accordance with the financial reporting framework used for the preparation and presentation of the financial statements.

(Gigler and Hemmer 1998; Stocken 2000; Lundholm 2003; Ball et al. 2012). In particular, Gigler and Hemmer found that mandatory reporting plays a confirmatory role in an agency setting. Further, they argued that voluntary disclosures are more informative, since they are mainly based on managers' private information (Gigler and Hemmer 1998). In a similar vein, Stocken stated that voluntary disclosures are ignored by the market and considered not credible, if there are no mechanisms to enforce verifiability (Stocken 2000). On the other hand, in the presence of proper mechanisms to enforce verifiability, voluntary disclosure may be considered credible and informative (Stocken 2000; Lundholm 2003; Dhaliwal et al. 2011). Lundholm also highlighted that if the mandatory disclosure is mainly backward-looking, the voluntary disclosure becomes more credible (Lundholm 2003).

According to disclosure theory, companies provide voluntary disclosures if their benefits cover their costs. In particular, costs of disclosing voluntary information regard disadvantages linked to giving away sensitive information for a firm, resulting in a dangerous loss of competitive advantage or in litigation and proprietary costs (Elliot and Jacobson 1994; Healy and Palepu 2001; Beattie and Smith 2012).

However, the recent trend has been a general increase in the amount of voluntary disclosures, thanks also to some reforms issued in an international setting,[13] which have fostered a reduction in the information asymmetry between managers and investors, and to the growing development of Internet, which allows managers to use corporate website to present company reports (Ismail 2002).

2.3.2 Financial and Non-financial Information: Second Level of Analysis

As shown in Fig. 2.1, voluntary disclosure, as well as mandatory disclosure, can be both financial and non-financial. As a matter of fact, the second level of analysis entailed the distinction between financial and non-financial information.

Examples of documents which regard mandatory financial information could be represented by the income statement and the balance sheet,[14] whereas mandatory non-financial information could be the MD&A (Cole 2005).

Li (2010) argued that the mandatory nature of MD&A makes it obligatory for firms to make public, reliable and understandable the information about the predictable trends that may affect the future operations of their business (Li 2010). Regulators, in the U.S., have attempted to improve the quality of this mandatory document, especially in response to some financial scandals (SEC 2003a, b).

[13] For instance, in the U.S., the SEC enacted the Securities Offering Reform, stating that: "*the primary benefit that the rules seek to achieve is an increased flow of information to investors during a registered offering*." (SEC 2005).

[14] Classical mandatory documents which comprised the financial reporting.

Nevertheless, management's discretion in producing and disclosing MD&A remains a fact (Meiers 2006; Cohen et al. 2008; Sutton et al. 2012). Therefore, managers could use discretion in choosing which kind and amount of non-financial information to disclose in the MD&A.

An example of voluntary financial information could be represented by earnings estimates (Chow and Wong-Boren 1987; Kent and Ung 2003; Graham et al. 2005), whereas voluntary non-financial information could regards social, human and environmental disclosures, such as Corporate Social Responsibility (CSR)[15] (Dhaliwal et al. 2011) and Intellectual Capital disclosure[16] (Bontis 2001).

With regard to this level of analysis, the Jenkins Report (AICPA 1994) framework proposed the following classes of voluntary information: (1) financial data, (2) operating data and performance measurements, (3) management analysis of financial and non-financial data with identification of the reasons for changes in the financial, operating, and performance data, (4) forward-looking information with identification of the opportunities and risks, including those resulting from: (a) key trends, (b) management's plans, (c) critical success factors, and (d) comparison between actual business performance and previously disclosed opportunities, risks and management plans, (5) information about management and shareholders with regard to directors, managers, compensation, major shareholders, transactions and relationships among related parties, (6) objectives and strategy, (7) purpose and description of business and properties, and (8) effects of organization structure on the company.

In 2001, the Intellectual Capital disclosure was added to the aforementioned framework proposed by the Jenkins Report (FASB 2001). Other international professional associations pointed out the growing relevance of non-financial information; Association for Investment Management and Research argued that this kind of disclosure could represent a good means of communicating a firm's progress and evolutionary paths to stakeholders (AIMR 1992).

Although the literature about voluntary financial information is quite huge, some recent research has focused on the growing relevance of the non-financial voluntary information. In particular, scholars have analyzed the effect of disclosing non-financial information, and controversial findings about this topic have been presented. Disclosing voluntary non-financial information could contribute to reducing the gap between external and internal information, to reducing the cost of capital and to attracting institutional and specialized investors (Dhaliwal et al. 2011); whereas environmental reporting seems not to have improved environmental performance (Cho and Patten 2013).

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[15] CSR regards the company's management of the business process in order to produce an overall positive impact on society.

[16] Intellectual Capital may contribute to create a company's long-lasting value (Robb et al. 2001) and it has three main components, namely human capital, structural capital and relational capital (Bontis 2001).

Despite these considerations and controversial findings, professional associations and academics seem to agree that an increase of this kind of information is necessary and should help in creating long-lasting value for a company. As a matter of fact, some scholars have pointed out the relevance of extending the financial reporting boundaries beyond traditional models based on classical, tangible assets (Amir and Lev 1996; Collins et al. 1997; Lev and Zarowin 1999; Francis and Schipper 1999; Healy and Wahlen 1999; Dainelli and Giunta 2011). To confirm this trend, some scholars have underlined that even financial analysts seem to perceive the relevance of non-financial information. As a matter of fact, they have begun to use and to evaluate non-financial indicators (Previts et al. 1994; Rogers and Grant 1997; Breton and Taffler 2001).

2.3.3 Forward-Looking and Historical Information: Third Level of Analysis

The last level of analysis regards the distinction between forward-looking and historical information. Forward-looking information could be defined as a set of disclosures regarding prospective changes in a firm's environment, its mission and strategy, and short and long-term forecasts; on the other hand, historical information could be defined as a set of documents relating to past company performance, the company's organizational structure, features and a history of a firm's production, and features of past and current customers.

As shown in Fig. 2.1, forward-looking information could be either financial and non-financial. The same considerations could apply to historical information.

In this regard, some academics and professional associations have pointed out the relevance of extending the financial reporting boundaries beyond traditional models based on classical financial statements and historical dates (Cattaneo 1959; Elliott 1992; Wallman 1995; Lev and Zarowin 1999; ICAEW 2003; Quagli and Teodori 2005; Seyfert et al. 2006). In a similar vein, some academics have demonstrated the low relevance and usefulness of classical financial and historical-based metrics (Sveiby 1997; Edvinsson and Malone 1997).

In this setting, academics have pointed out the growing relevance of forward-looking information. As a matter of fact, this theory is supported by academics who underlined the greater relevance of forward-looking financial and non-financial performance indicators, especially in a changing world (Kaplan and Norton 1996; Mavrinac and Siesfeld 1999).[17]

[17] "In this regard, Mavrinac and Siesfeld stated: "*In a world of increasing technological change and shortened product life cycles, and in a world where knowledge work and intangible assets have become of profound importance, future financial performance is often better predicted by non-financial indicators than by financial indicators*" (Mavrinac and Siesfeld 1999). Furthermore, Kaplan and Norton stated: "*financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and custode*

Similarly, other academics have emphasized that forward-looking disclosure improves the accuracy of analysts' forecasts (Robb et al. 2001; Bozzolan et al. 2003; Vanstraelen et al. 2003). Lev and Penman pointed out that management forecasts are credible, because these can be verified ex-post by comparison with audited reports (Lev and Penman 1990). Furthermore, other authors have highlighted the increasing relevance of soft information, that is, unquantified and unquantifiable information. According to their perspective, soft information is not possible to quantitatively determine and to quantify with accuracy, especially when information is future-oriented (Beattie et al. 2004).[18]

The viewpoint of professional associations on this topic is quite consistent with those in academic circles, with an emphasis on the growing relevance of forward-looking and non-financial information, which is considered particularly relevant for creating long-lasting value for a company. As a matter of fact, AICPA underlined the pivotal role of forward-looking information based on prospective information in order to increase the significance and meaning of classical financial reporting (AICPA 1994).[19] As shown in the previous section, the Jenkins Report underlined that company information could be improved through the adoption of different perspectives with respect to the economic-financial one. These different perspectives especially regard non-financial and future-oriented information such as: consumers, creditors, investors, aims and strategies, and managerial analysis.[20]

Moreover, in 2010 the IASB issued the IFRS practice statement No. 1 on Management Commentary,[21] which seems to be in line with the Jenkins Report.

relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation" (Kaplan and Norton 1996).

[18] "*The general trust of these articles and reports is that there is a need for more information that is forward-looking and non-financial in nature. It is recognized that much of this new information will be soft, i.e., either unquantified or unquatifiable*" (Beattie et al. 2004).

[19] The AICPA stated "*The Committee believes that disclosure of performance measures would provide leading indicators about a company's future (…). Users are forever searching for better leading indicators of performance; indicators about existing conditions that provide insight into a company's future performance. Since future performance is often a function of how well a company performs key activities, performance measurements are often superior leading indicators of a company's performance*" (AICPA 1994).

[20] For further considerations about the Jenkins Report, see also: (Ansari and Euske 1995; Eaton and Roth 1998). In particular, Ansari and Euske argued that the aim of the Jenkins Report was to reduce barriers between FA and MA disciplines. This point is particularly interesting for the present work.

[21] Management Commentary has the purpose *of providing a broad, non-binding framework for the presentation of management commentary that relates to financial statements that have been prepared in accordance with International Financial Reporting Standards (IFRSs),* (IASB 2010b). This report should include, as the Jenkins Report does, the following information: (1) *forward-looking information; and* (2) *information that possesses the qualitative characteristics described in the Conceptual Framework for Financial Reporting* (IFRS practice Statement Management Commentary) (IASB 2010b).

In particular, the Management Commentary attempted to stimulate the alignment between FA and MA, by suggesting to firms to disclose, in their financial reporting, more non-financial and forward-looking information than financial and historical information (IASB 2010b).

In a similar vein, the Accounting Standards Board in the U.K. issued the Reporting Statement: Operating and Financial Review (ASB 2006),[22] which is a "*narrative explanation, provided in or accompanying the annual report of the main trends and factors underlying the development, performance and position of an entity during the financial year covered by the financial statements, and those which are likely to affect the entity's future development, performance and position*." The OFR statement was replaced by the Financial Reporting Council's *Guidance on the Strategic Report,* which was issued in June 2014. The guidance encourages companies to prepare a "*high quality strategic report—which provides shareholders with a holistic and meaningful picture of an entity's business model, strategy, development, performance, position and future prospects*" (ASB 2014).

Furthermore, the Global Reporting Initiative (GRI) contributes to promoting forward-looking and non-financial indicators, by helping firms to disclose environmental and social sustainability items. In a similar vein, the World Intellectual Capital Initiative (WICI) supports firms in defining and disclosing internal Key Performance Indicators (KPIs) on intangibles (WICI 2010). Therefore, examples of non-financial and forward-looking information are the Intellectual Capital and the CSR disclosures.

Despite the aforementioned considerations about the growing relevance of this kind of FA information, a survey carried out by PricewaterhouseCoopers (PwC 2007) demonstrated that analysts and investors do not rely on management information, because they do not expect neutral behaviour by managers in disclosing sensitive information. Managers are indeed prone to emphasizing the positive performance of the company, hiding or simply omitting negative news and performance (Silvi and Bartolini 2011).

In the end, FA has evolved from backward-looking stewardship accounting to a contemporary forward-looking valuation focus, assisting investors in their decision making (Jones and Luther 2005; Hemmer and Labro 2008; Eierle and Schultze 2013). Therefore, faced with the proliferation of voluntary disclosure in terms of forward-looking and non-financial information, it is becoming more and more relevant to set new control activities and new tools in order to verify the reliability of the overall FA disclosure. The difficulty of control mainly concerns the fact that soft information is not so easily verifiable. Thus, a possible solution could be the

[22] The mentioned document states that: "*the Reporting Statement recommends that directors prepare an OFR addressed to members, setting out their analysis of the business, with a forward-looking orientation in order to assist members to assess the strategies adopted by the entity and the potential for those strategies to succeed. The information disclosed in OFR will also be of relevance to other stakeholders. The OFR should not, however, be seen as a replacement for other forms of reporting addressed to a wider stakeholder group*." (ASB 2006).

one emphasized by Lev and Penman, which entails an ex-post comparison between forward-looking information and ex-post audited reports (Lev and Penman 1990). Furthermore, another possible solution could be the introduction of new mechanisms and tools aimed at encouraging the reasonableness of the assumptions that lie behind such estimates and assumptions (Superti Furga 1985).

These development paths that involved the overall FA flow of information have led to some relevant changes to Management Accounting (MA),[23] thus providing promising initial evidence about the convergence between FA and MA (Ansari and Euske 1995), as will be shown more clearly in Chap. 3.

The following sections will discuss several theories which could represent a possible explanation of the FA development paths.

2.4 Theories for Supporting and Containing the Evolution of Financial Accounting: An External Perspective

As shown in Sect. 2.2, FA disclosure should be aimed mainly at satisfying the information needs of external stakeholders and, furthermore, at satisfying internal and managerial needs to properly disclose firms' performance to the market.

In this way, it is possible to reduce the uncertainty for investors and, consequently, the cost of capital. This concept is consistent with the assumption that the overall FA information should be relevant for the decision-making of a large number of final users. Therefore, stakeholders should have reliable and proper corporate information. To reach this primary aim of FA information, the internal managers surely play a pivotal role in deciding what and how many types of information to disclose to the market. Furthermore, as shown before, companies tend to disclose an increasing amount of voluntary information in terms of non-financial and forward-looking disclosure, in order to reduce the information asymmetry between firms and investors (Verrecchia 1983; Admati and Pfleiderer 2000; Core 2001; Healy and Palepu 2001; Bamber et al. 2010; Bens et al. 2011).

Nevertheless, information asymmetry between firms and stakeholders in general poses some problems that should be solved through a proper balance between costs and benefits in providing additional corporate disclosure to the market. Some problems could be linked to the risk of giving away internal and sensitive information (Beattie and Smith 2012), about proprietary costs (McKinnon and Dalimunthe 1993) and litigation costs (Beattie and Smith 2012).

The following theories propose possible solutions to the above-mentioned problems, support mangers in managing and disclosing different kinds of business information, and highlight how costs could hinder companies in providing additional disclosure. Specifically, these theories regard the process of communication

[23] For further insights, see also Sect. 3.2.4 of the present work.

in disclosing firms' overall performance and intrinsic reasons of this process. As shown in the following sections, these theories are mainly based on economic assumptions. Over time, academics have attempted to adapt these economics theories on business and managerial aspects.

Of particular relevance are, inter alia, agency theory, signalling theory and legitimacy theory, which identify a thrust towards the disclosure of a greater amount of non-financial and forecasting information on a prevalently voluntary basis, the explanation of the underlying reasons for this trend, and the attribution of the main causes of voluntary disclosure to the external market.

The next section discusses the following theories in support of the FA development paths: (1) the agency theory (Sect. 2.4.1), (2) the signalling theory (Sect. 2.4.2), and (3) the legitimacy theory (Sect. 2.4.3). On the opposite hand, proprietary costs, political costs and litigation costs may be used to explain constraint factors in the evolution of the disclosure of overall FA information (Sect. 2.4.4).

2.4.1 Agency Theory

Agency theory can be used to explain the reasons behind the managers' decision to disclose information on a voluntary basis (see Fig. 2.2). According to this perspective, voluntary disclosure can potentially reduce the cost of agency in terms of cost of equity and cost of debts, by reducing the information asymmetry between management and shareholders and/or between bondholders and management (Firth 1979; Bradbury 1992; McKinnon and Dalimunthe 1993; Hossain et al. 1995; Mitchell et al. 1995; Hossain and Mitra 2004).

In 1976, Jensen and Meckling gave the following definition of agency relationships: "*a contract under which one or more persons (principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent.*" (Jensen and Meckling 1976).[24]

Agency relationships within a firm can bring about two main potential conflicts of interests: (1) between shareholders and management; and (2) between bondholders and management.[25] Agent corresponds to managers, whereas principal corresponds to shareholders or to bondholders from a company perspective.

Considering both kinds of potential conflicts of interests, management can act in order to satisfy its interests alone, which could result in disadvantages for shareholders and/or bondholders. Agency costs are thus related to the sum of losses

[24] Agency problems, applied to firms, concern the separation of interests between a firm's ownership and control (Jensen and Meckling 1976), between different suppliers of capital (Smith Jr. and Warner 1979) and between decision making and control functions (Fama and Jensen 1983).

[25] These conflicts of interests are based on the fact that managers have more information than shareholders/bondholders.

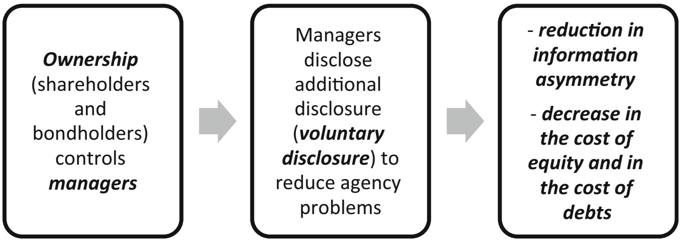

Fig. 2.2 Agency theory and the mechanism pressure to disclose voluntary information (*Source*: author's presentation)

suffered to reduce agency problems[26] (Chan and Watson 2011).[27] As agency costs are essentially born by managers, managers may be motivated to provide voluntary information to reduce such costs (Hossain et al. 1995). As a matter of fact, according to this theory, the awareness of being constantly controlled by shareholders/bondholders encourages managers to proactively communicate with their reference market. Therefore, the purpose of the voluntary disclosure becomes to demonstrate the company's positive performance to the market, thus improving the quality of the overall FA disclosure (Watson et al. 2002).[28]

In this way, shareholders and/or bondholders may have useful additional information in order to evaluate management, thus reducing the information asymmetry between the final users and the company.

Furthermore, regulations have attempted to reduce agency problems (Healy and Palepu 2001), even if a full removal of agency problems and, therefore, a full disclosure is impossible in practice, since the divergence of interests between ownership and management still remains (Al Razeen and Karbhari 2004).

Based on agency theory, academics have investigated the determinants of the voluntary disclosure. Some scholars found that the determinants of voluntary disclosure are mainly size and leverage (Bradbury 1992; Mitchell et al. 1995; Hossain and Mitra 2004; Prencipe 2004); McKinnon and Dalimunthe instead found other determinants of voluntary disclosure, namely: size, ownership diffusion, minority interests and industry (McKinnon and Dalimunthe 1993).

[26] Principals have to pay for monitoring costs in order to limit the agents' aberrant activities. Agents have to pay for bonding costs in order to eliminate potential harm that could be produced by the principals' interests. Finally residual loss occur when the agents do not maximize the principals' welfare (Jensen and Meckling 1976).

[27] For further insights into agency costs, see also Smith and Warner (1979).

[28] According to Watson et al. (2002), through the voluntary disclosure, managers are able to demonstrate and even convince shareholders that firms are performing in an optimal way (Watson et al. 2002).

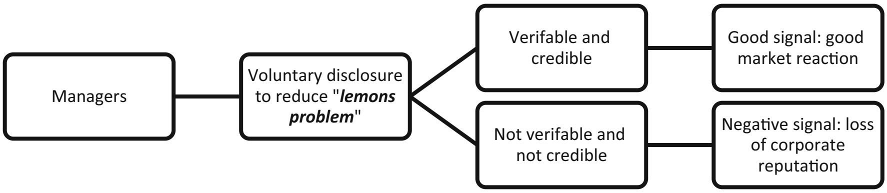

Fig. 2.3 Signalling theory and the mechanism pressure to disclose voluntary information (*Source*: author's presentation)

2.4.2 Signalling Theory

Signalling theory, conceived of to explain the behavior of the labour market, may be used to explain voluntary disclosure (see Fig. 2.3); it also addresses problems of information asymmetry in the market (Spence 1974; Ross 1977; Watts and Zimmerman 1990). Even if this theory seems to be competitive compared to the agency theory, an overlapped area between the two theories exists (Morris 1987). Signalling theory takes advantage of the consideration that lemons problem exists; therefore, it attempts to solve it. In particular, it shows that information asymmetry could "*be reduced by the party with more information signalling it to other*" (Morris 1987).

Akerlof, in 1970, highlighted that lemons problem could be represented by those situations in which buyers need to evaluate the quality of goods offered by sellers in a situation of information asymmetry. If buyers do not have enough information about the quality of goods sold, sellers of lower quality goods (*lemons*) can exploit the information asymmetry for themselves (*moral hazard*). In this situation, buyers could overestimate the price of lemons. As a consequence, the price of higher quality goods is underestimated (*adverse selection*). Therefore, the only way for higher quality goods sellers *not to be cheated* is to eliminate the information asymmetry, by signalling the higher quality of their products (e.g. through the warranties, etc.) (Akerlof 1970).

In firms, signalling theory is thus based on the information asymmetry between investors and firms. Managers try to develop solutions to this inconvenience in order to reduce negative consequences that the information asymmetry could have for the firm and the market in general (Campbell et al. 2001). Therefore, in such a context, "signalling" could be intended as a sort of reaction to information asymmetry in the market and it could be represented by voluntary disclosure. However, the theory points out that managers' signals sent to the market must be credible and verifiable, because in the event of any false disclosure on business performance, the market will react by considering unreliable all the subsequent disclosures. This consequence may result in a loss of reputation for the firm and a serious and unavoidable detriment to the company's image in the market (Eccles et al. 2002).

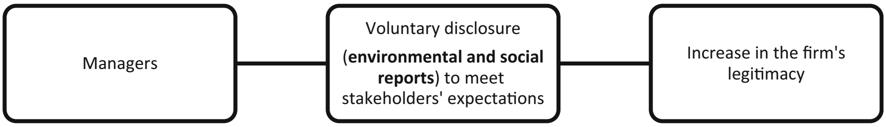

Fig. 2.4 Legitimacy theory and the mechanism pressure to disclose voluntary information (*Source*: author's presentation)

2.4.3 Legitimacy Theory

Other authors have used a 'legitimacy theory' to explain voluntary disclosures concerning environmental and social impacts (Guthrie and Parker 1989; Deegan and Gordon 1996). Therefore, according to this theory, if a given kind of information is disclosed stakeholders will feel safer about business performance (which is consequently expressed both in financial and non-financial terms) (see Fig. 2.4).

In particular, legitimacy theory posits that firms seek to operate by respecting the standards and laws of their society (van der Laan 2009). More in detail, the term "legitimacy" could be defined as "*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions*" (Suchman 1995). Therefore, a legitimacy gap could exist whether or not firms' performance is in line with stakeholders' expectations. In this circumstance, a firm could decide to disclose social reports (such as CRS) in order to restore or even enhance the firm's legitimacy (Magness 2006).

2.4.4 Constraints on Additional Disclosure

The literature has shown that incentive to disclose increasing amounts of information goes further to meeting the urgent requirement of stakeholders to get transparent, reliable and consistent disclosures about the future perspectives of the company. Empirical research studies have shown that this will certainly happen if the existing and expected corporate performance is good, so that managers have an interest in disclosing their quality and positive image to investors and financial analysts (Singhvi and Desai 1971).

These considerations led some authors to point out a possible relationship between disclosure and profitability, since the companies with a higher level of profitability are pushed to publish detailed corporate information with the goal of supporting their stable position in financial markets (Gray and Roberts 1989; Inchausti 1997). According to these theories, some residual doubt remains as to the choice of the disclosure behavior adopted by companies in the event their economic and financial situation is not so brilliant or if any prediction indicator shows a difficulty in future company performance. In such circumstances it is not clear what common behavior should be adopted by companies.

In addition to this first uncertainty, other factors should be considered that may cause restrictions to voluntary disclosure, such as litigation costs, political costs and proprietary costs (Graham et al. 2005).

Litigation costs are the costs required to collect and process information during legal actions. In particular, managers may reduce voluntary disclosure in terms of forward-looking information when they perceive a risk of being penalized for their forecasts in legal actions (Healy and Palepu 2001; Graham et al. 2005).

Political costs mainly depend on the firm's size (Shehata 2014). In fact, large companies with good performance tend to decrease the level of voluntary information in order to avoid political attacks, thereby reducing the media attention (Wallace et al. 1994; Camfferman and Cooke 2002).

Proprietary costs are generated when disclosure is potentially detrimental to the company as a result of government regulations or due to an increase in the level of competition between businesses (e.g. competitive and political disadvantages) (McKinnon and Dalimunthe 1993). Dye defined proprietary cost as "*any information whose disclosure potentially alters a firm's future earnings gross of senior management's compensation*." (Dye 1986). In such circumstances, managers could decide not to disclose additional information in order to preserve the firm's competitive position within the market (Campbell et al. 2001). Therefore, firms are prone to disclose voluntary information if the expected benefits from disclosing such private information are higher than proprietary costs; in this way firms are able to reduce the cost of capital (Hossain and Mitra 2004; Prencipe 2004). Proprietary costs theory identifies the following costs: the costs of preparing, disseminating and auditing information and of giving away firms' secrets (Verrecchia 1983; Darrough and Stoughton 1990; Wagenhofer 1990; Berger and Hann 2007; Chan and Watson 2011).

2.5 Internal Determinants of Financial Accounting Development Paths

The previous sections have discussed theories which identified the determinants and obstacles in disclosing additional disclosure. As shown before, the aforementioned theories are mainly based on economic assumptions and essentially focus on the complex relationships between managers and external stakeholders, by analyzing the process of communication of the overall FA information. Therefore, the main perspective was the external one. Nevertheless, FA does not only have an objective dimension, but a subjective one as well in which people, relationships, structures and functions are involved. Therefore, the analysis of the determinants of FA information development paths cannot only entail an external viewpoint, but must identify internal factors which may affect FA evolutionary paths.

In essence, internal factors could be found in the features of corporate governance and the firm's culture (Sect. 2.5.2). Therefore, a social theory, namely, institutional theory, was exploited to explain changes in a firm's features which could have affected the FA development paths (Sect. 2.5.1). The institutional theory is, indeed, particularly suitable to explaining development paths and changes within an organization.

2.5.1 Institutional Theory

Institutional theory could be defined as the adaptive process that an organization could have in response to the features and commitments of its participants and to factors and obstacles from the external environment (Scott 1987).[29]

According to this theory, changes can thus be determined by institutional rules and structures (Meyer and Rowan 1977). Pressures beyond institutional theory may be classified into four main categories, namely: (1) coercive, (2) normative, (3) mimetic, and (4) economic (DiMaggio and Powell 1983).

The first three pressures are focused on the model of institutional isomorphism, whereas the fourth is based on economic rationality (Ikäheimo and Taipaleenmäki 2010).

Coercive pressures regard legal mandates such as, national and international legislation and the influence from organizations they are dependent upon. Coercive isomorphism could thus be both formal (legal mandates) and informal (cultural pressures).[30]

Normative pressures regard groups of professionals and associations who hold similar attitudes, approaches and positions in the organization and are brought into the firm through hiring practices. Therefore, these kinds of pressures mainly refer to professionalization (Larson and Larson 1979; Collins et al. 1997).[31]

Finally, mimetic pressures concern in particular the uncertainty that could encourages imitation practices among organizations (DiMaggio and Powell 1983; Vos et al. 2011). All the above-mentioned pressures could change the accounting procedures, methods and techniques, the accounting information systems, the information flow, and the functions and roles of accountants (Taipaleenmäki and

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[29] Scott argued that the adaptive process of the organization could regard structures, rules, norms, and routine (Scott 2004). Selznick defined institutionalization as something "*that happens to the organization over time*.", observing that institutionalism pressures can be different across companies (Selznick 1957).

[30] In the words of Di Maggio and Powell: "*Coercive isomorphism results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function. Such pressures may be felt as force, as persuasion, or as invitations to join in collusion*." (DiMaggio and Powell 1983).

[31] Di Maggio and Powell defined professionalization as follows: "*the collective struggle of members of an occupation to define the conditions and the methods of their work, to control the production of producers and to establish a cognitive base and legitimation for their occupational autonomy*." (DiMaggio and Powell 1983).

Ikäheimo 2013). Therefore, these pressures could affect both the objective and the subjective dimension of FA.

For firms, examples of coercive pressures which could bring about relevant changes in FA are the governmental legal and technical requirements, such as financial reporting requirements. In fact, FA has changed specifically in response to international legislation (EC Reg. No. 1606/2002, Leg. Dec. no. 38/2005, and Modernization Directive 51/2003), which requires listed companies to adopt international accounting standards in order to favor the harmonization of accounting practices. Moreover, example of normative pressures which could bring about relevant changes in FA is hiring people from other organizations that could bring innovative tools in order to elaborate and produce FA information. In this regard, such individuals could also bring their positive or negative past experiences and practices in producing and disclosing forward-looking and non-financial information. A final example of mimetic pressures which could bring about relevant changes in FA is the possibility of imitating other similar organizations in producing and disclosing additional information.

Institutional theory was thus used above as a basis for the analysis of those determinants of FA development paths which mainly come from a firm's internal dynamics. The next section identifies and discusses corporate governance and culture as the main internal determinants of FA evolutionary paths.

2.5.2 Corporate Governance and Culture

In addition to the external determinants of the evolution of FA, some internal determinants are identified in some literature streams.

As a matter of fact, some authors have focused on the determinants of both mandatory and voluntary disclosure, introducing relevant factors which could affect FA, such as corporate governance and culture. The relationship between financial disclosure and corporate governance was studied by several authors, who essentially found that boards of directors and independent audit committees are relevant factors which could affect the reliability of financial reporting (Beekes et al. 2004; Anderson et al. 2004).

Other studies have investigated how the firm's size, the quality of corporate governance and the disclosure of bad news could affect disclosure compliance (Ettredge et al. 2011). Ettredge et al. found that non-compliant companies are characterized by a lower quality of corporate governance and by less need for external financing. Further, they found that these organizations are not usually smaller in size than compliant companies. However, the size of the company is important, since for small-size firms, compliance with rules and regulations could represent a very high cost, and these firms do not often have the adequate resources and competencies for that purpose. These studies suggest the need to pursue improvements in the corporate governance of small/medium-sized companies in order to achieve better disclosure compliance, even in the presence of bad news (Ettredge et al. 2011).

The presence or omission of bad news to be disclosed to the external market is another central point of the debate among researchers (Healy and Palepu 2001; Kothari et al. 2009).

Empirical research findings have shown a certain degree of opportunistic behaviour by managers aimed at omitting the voluntary disclosure of negative information for investors (Ettredge et al. 2011).

With regard to the corporate governance issues that affect disclosure, some professional organizations have also expressed their opinion. One of these is the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2004), which identified the board of directors and the internal control committee as the bodies within an organization that could produce direct effects on financial disclosure. Other authors have focused only on voluntary disclosure and studied its relationship with corporate governance: they have identified some independent variables, such as the composition of corporate governance in terms of indirect directors, institutional ownership and the type of auditors. These authors have observed that companies characterized by a more solid corporate governance system and proper control boards are generally more effective at inducing managers to disclose a greater amount of information, especially on a voluntary basis (Khoshbakht and Salteh 2011). Other scholars have analysed the relationships between corporate governance and voluntary disclosure. Cheng and Courtenay found a positive relationship between board independence and voluntary disclosure (Cheng and Courtenay 2006). Ho and Shun Wong found that the existence of an audit committee is positively correlated to the extent of voluntary disclosure (Ho and Shun Wong 2001). Michelon and Parbonetti found that corporate governance may represent a pivotal factor "*in orienting the heterogeneity of sustainability disclosures provided by US and European companies*" (Michelon and Parbonetti 2010), concluding that "*it shows that board composition need to be analysed with more detail, beyond the distinction between dependent and independent board members. Independent directors are not homogeneous in terms of backgrounds, competences, and effects on how boards perform their tasks*" (Michelon and Parbonetti 2010, 2012).

In a similar vein, Haniffa and Cooke investigated the relationship between corporate disclosure and voluntary information, finding that the presence of non-executive directors and the domination of family members on the board could affect the amount of a firm's voluntary disclosure. Specifically, they suggested that the presence of non-executive directors and, generally, cultural issues are significant variables that affect the scope, nature and purpose of the voluntary disclosure. As a matter of fact, non-executive directors play a relevant monitoring role in management and, when this role is truly perceived by the external market, the latter's expectations *vis-à-vis* management increase in terms of the desire for a greater amount of disclosure (Haniffa and Cooke 2002).

In this regard, according to some of the literature, the notion of corporate governance is enriched by the cultural component (Gibbins et al. 1990; Mir

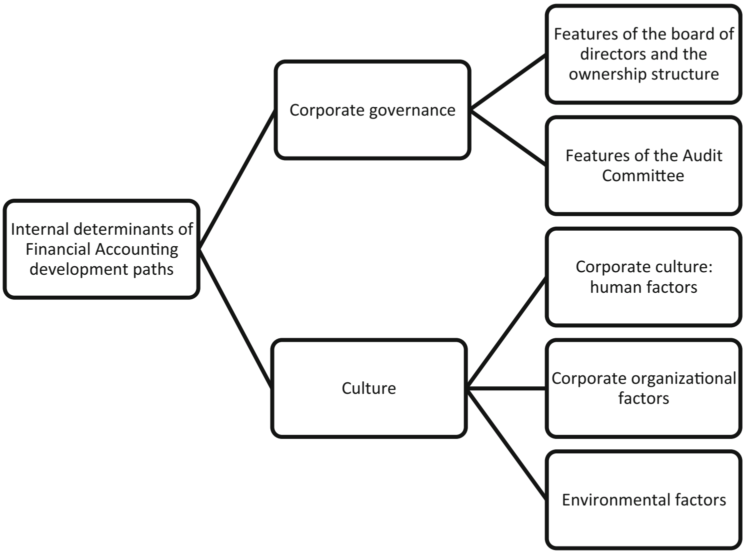

Fig. 2.5 Internal determinants of the financial accounting development paths (*Source*: author's presentation)

et al. 2009). According to these studies, corporate disclosure is affected both by human (culture and features of the board) and non-human factors (environmental factors). Gibbins et al. maintain that corporate disclosure is affected not only by the need to achieve high levels of efficiency in exchanges and production, but also by the company's values, which are reflected in informal rules and regulations (Gibbins et al. 1990). Mir et al. compared several countries to explore the differences in voluntary disclosures due to the different cultures underlying accounting practices (Mir et al. 2009). Other studies have analysed the differences in accounting practices due to the differences across countries (Desmond 2000; Abeysekera and Guthrie 2005) and across managerial cultures (Stanton et al. 2004). This literature stream opens interesting avenues of research, in analysing the internal determinants of FA development paths, which could be represented by the features of corporate governance and by the cultural components of both the company and the external environment in which the company operates (see Fig. 2.5).

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Chapter 3
Premises for the Convergence of Financial Accounting and Management Accounting

3.1 Introduction

The following sections focus on the analysis of the internal control system within a company, its features and components, introducing and deepening the issue of Management Accounting (MA). Furthermore, they provide the initial promising link between the internal control and Financial Accounting (FA), analysed from the point of view of academics and professional associations, pointing out a virtuous circle between the forward-looking perspective of FA and forward-looking MA. Section 3.2 discusses premises for the alignment of FA to MA, with a special focus on the Italian setting. Section 3.3 discusses the convergence or divergence of FA and MA, highlighting interesting differences among countries and cultures.

3.2 A Promising Relationship

The following sections introduce the concepts of control, of internal control systems and of management control or MA, from the point of view of professionals and academics. The evolutionary paths that have affected these topics have led academics and practitioners to underline a promising relationship between control and FA.

3.2.1 The Debut of "Control"

Over time, the issue of control has been the focus of important debates among practitioners and academics, with several definitions being proposed.

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In the Italian context, the debut of "control" can be traced back to Fabio Besta who introduced the concept of economic control. Besta defined control as: "*at part of the administration in which all the economic work is observed and studied in its causes and effects, for the purpose of directing it with well-founded knowledge, and is stimulated and circumscribed, serving as a guide to proceed in a manner which, as determined by higher authorities or by direct or indirect delegation, is recognized as more advantageous and thus preferable*." (Besta 1922: 26; translated from the original). Furthermore Besta stated that: "*The control seems to be composed of two parts: the former regards the calculation and recording of the economic administration; the latter regards the constraint of economic work. The former incorporates the second and vice-versa and they are thus combined in a unique process*." (Besta 1922: 114; translated from the original).

Besta identified three types of control: *antecedent, concomitant and subsequent*. Antecedent control refers to the planned period; concomitant control refers to different kinds of surveillance activities, and subsequent control refers to the comparison activities between results and the firm's goals (Besta 1922: 115).

Another Italian academic highlighted that control is characterized by both cognitive and preventive functions[1] (D'Alvise 1934).

Over time, the term "*control*" has taken two main meanings: the first regards the inspection and verification functions (*preventive planning*), whereas the second regards the guidance and government function of a firm that should be oriented towards the pursuit of its objectives (*prospective planning*) (Zappa 1957; Masini 1970; Brunetti 1979).[2] This Italian perspective was in line with the American literature of that time; as a matter of fact, Anthony identified operational and strategic planning. Operational planning could be compared to preventive planning, whereas strategic planning could be compared to prospective planning (Anthony 1965).

According to Horngren, control is part of a larger system that could be defined as the accounting system. In Horngren's approach, the accounting system is aimed at providing information useful in pursuing three main categories of objectives: (1) the preparation of internal reports addressed to managers and necessary for the planning and control of business operations; (2) the preparation of internal reports addressed to managers and necessary for strategic planning and for decision-making; and (3) the preparation of external reports addressed to all stakeholders interested in the firm (Horngren 1974). This interesting perspective introduces an external dimension of control, since Horngren argues that control is not only addressed to internal managers, but even to people outside the company, especially to assure them in terms of the reliability of the overall FA flow of information. This definition of control may be seen as an antecedent to the definition of the concept of internal control system (Sect. 3.2.1).

[1] For a deep analysis of management control in the Italian setting, see, among others, Demartini (2014).

[2] For further insights on these topics, see Demartini (2014).

3.2.2 The Internal Control System

The issue of the internal control system has been addressed by both professionals and academics, and a number of definitions have been given over time.

In this regard, professional associations have recently given some interesting definitions, as shown below.

The American Institute of Certified Public Accountants (AICPA) proposed the following definition of internal control system: "*Accounting control comprises the plan of organization and the procedures and records that are concerned with safeguard assets and the reliability of financial records and are, therefore, designed to give reliable assurance about authorized transaction, proper recording of transactions, access to assets, and verification of existing assets*."

Furthermore, the Code on Corporate Governance underlined the relevance of analysis and control carried out by firms' management on the reliability of internal control and stated that "*The board should maintain a sound system of internal control to safeguard shareholders' investment and the company's assets*" (Council 2010).

One of the most common and technical definitions of internal control system is proposed by the COSO Report.[3] This model defined five components, namely: (1) Control Environment; (2) Risk Assessment; (3) Control Activities; (4) Monitoring; and (5) Information and Communication. The COSO report was first developed in the U.S. as a result of some new concerns regarding: (1) the increasing frequency of frauds, potentially dangerous for the integrity of business disclosure; (2) innovations in corporate compliance; and (3) the growing attention to the prevention of fraudulent activities (Anderson 1978[4]; D'Onza 2008).[5]

In a similar vein, the internal control system concept was discussed by academics from all over the world. Academics have proven to be in line with the professional associations' point of view, even if their definitions are less technical than the latter's. However, they have introduced interesting considerations about this issue. Specifically, they agreed that the internal control system aims at

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[3] In 1992 the COSO report defined the internal control system as follows: "*Internal control is broadly defined as a process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: effectiveness and efficiency of operations; reliability of financial reporting; compliance with applicable laws and regulations*".

[4] In this regard, Anderson stated that "*with the best intentions, most people make mistake. The mistake may be errors in the end of their work, needless inefficiencies in achieving those end results, or both. And sometimes, without the best of intentions, a few people deliberately falsely. Any organisation wishing to conduct its business in an orderly and efficient manner and to produce reliable financial accounting information, both for its own and for others' use, needs some controls to minimise the effect of these endemic human failings. When such controls are implemented within the organisation's systems they are described as internal controls*" (Anderson 1978: 144).

[5] An interesting evolution of the COSO report's model is the Enterprise Risk Model (ERM), which introduced new levels of analysis and more attention to risk detection and prevention.

achieving the overall performance objectives, guaranteeing the proper use of internal resources in the business processes; the compliance with rules and regulations; and the production of a reliable FA disclosure (Bruni 1996; Coopers and Lybrand 1997; Hinna and Messier 2007; D'Onza 2008; Marchi 2008). Their perspective has allowed other areas (such as MA) traditionally separated from the issue of internal control systems to also be included in this concept. Within this wider framework, internal control system is thus composed of three main areas of activities of the firm, namely: (1) compliance control; (2) administrative and accounting control; and (3) management control, or MA.

The compliance control is the control aimed at assuring that laws and internal regulations are properly applied within the organization (D'Onza 2008; Marchi 2008). The administrative and accounting control has the main aim of guaranteeing the efficiency and effectiveness of firms' information, which is useful in satisfying internal and external users. In this regard, a relevant definition is given by AICPA: "*Accounting control comprises the plan of organization and the procedures and records that are concerned with the safeguarding of assets and the reliability of financial records*."

This part of internal controls is thus responsible for verifying the reliability of overall FA disclosure and safeguarding internal assets from intentional and non-intentional losses. Therefore, the administrative and accounting control should include the predisposition of a plan to identify roles and responsibilities, an authorization system, and procedures able to assure a reasonable control of the assets, revenues and expenses. Such control should thus include control tools which regard the processing of business information, such as the general ledger and cost accounting (Bonelli et al. 1991; Marchi 2005; Corsi 2008).

Empirical analysis in the Italian setting has underlined that the area of administrative and accounting control has been involved in huge investments and increasing automation in the objective dimension (instruments and procedures), especially due to new laws (Law 262/2005) (Allegrini and D'Onza 2003; Arena and Azzone 2009; Cortesi et al. 2009).

Furthermore, in the U.S., similar laws have been developed, introducing similar changes in this part of internal control. In detail, section 404 of the Sarbanes Oxley Act (SOX)[6] introduced a mandatory judgement by audit firms on management's assessment of the overall internal control system.[7]

[6] Section 404 of the SOX (U.S. Congress, 2002) required that financial statements of public companies, filed on Form 10-K and Form 10-Q, should contain an assessment by management of the design and operating effectiveness of the internal control over financial reporting. Section 404 also required that an external auditor, on an annual basis, provide an opinion on management's assessment of internal control (Securities and Exchange Commission (SEC), 2003). On this topic, see also Ettredge et al. (2006), Beneish et al. (2008) and Hoitash et al. (2008).

[7] Before SOX, auditors were driven by Consideration of Internal Control in a Financial Statement Audit, Statement on Auditing Standards (SAS), n. 78, AICPA 1995. See COSO (2006). On this topic see also Patterson and Smith (2007). They demonstrated that the introduction of SOX has improved the quality of the internal controls in terms of reduction of frauds.

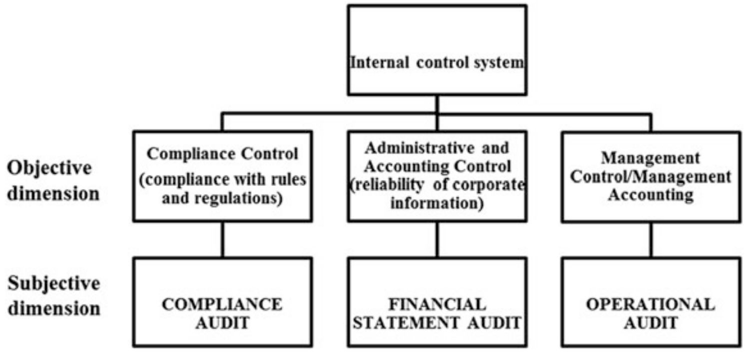

Fig. 3.1 Internal control system and its components (*Source*: author's presentation)

The last part of internal control could be defined as management control or MA.

From an objective to a subjective dimension of internal controls, the three aforementioned aims (or classes of control activities) could be compared to the three levels of audit. Such levels are: (1) *compliance audit*; (2) *financial statement audit*; and (3) *operational or management audit*[8] (see Fig. 3.1).

The compliance audit is carried out by the compliance office within a firm (Marchi 2008). The financial statement audit is, instead, carried out by an external party, namely, the audit firm, through the production of a document that contains a professional judgement on the reliability of the financial reporting. Finally, the operational audit is carried out through an overall evaluation of the business activities and is generally carried out by the staff of controllers (Marchi 2008).

MA (from both perspectives: objective and subjective) will be discussed in Sect. 3.2.2 and will be the focus of the present work.

3.2.3 A Brief Focus on Management Accounting

The third component of the internal control system is MA, which could be defined as a set of information flows useful in supporting management in the decision-

[8] Porter et al. (1996) and Marchi (2008). Specifically, Marchi argued that: "*At the lowest level we have the function of the administrative inspectorate. This activity concerns the respect of rules and regulations, in order to discover frauds, theft, or administrative irregularities in general, including the respect of business procedures and the general ledger. At the intermediary level, we find the financial statement auditing, which encompasses the controls on technical aspects linked to the application of accounting procedures. The main aim is to express a professional judgement on the reliability of business information. (...). At the highest level, we find the management auditing. The aim is to express a judgment on the efficiency and effectiveness of the business operations (operational audit)*" (Marchi 2008: 4, translated from the original).

making process, in financial performance planning, in cost accounting and in profitability improvement (Chadwick 1993).[9]

Through the time, scholars have given a number of definitions of MA; in particular, a well-known definition of MA was given by Anthony in 1965, who defined it as: "*the use of accounting information by management for purposes such as planning and control*." Anthony defined MA as a dynamic process which, through a continuous and constant comparison between forecasts and business results, allows managers to ensure the acquisition and use of the necessary resources in an efficient and effective manner, so as to achieve firms' objectives in compliance with the general principles of economic convenience (Anthony 1965; see also Brunetti 1979). The purpose of MA is to favour the achievement of the business management objective of a good economy; i.e. the strengthening of short and medium/long-term profit conditions. MA is thus relevant for defining forecasts and criteria for calculating costs, measuring internal performance, and preparing internal reports useful for interpreting and explaining to the board of directors the business performance.[10]

As the years have passed, MA was been enriched by new managerial techniques such as *Activity Based Costing*, *Life Cycle Costing* and *Strategic Cost Analysis* (Kaplan 1983, 1984).[11] Furthermore, since the 1980s scholars have stressed the need to introduce in MA, tools not only based on financial performance metrics but also on non-financial indicators mainly oriented to a long-term perspective (Rappaport 1978; Kaplan and Norton 1994). All these changes in the area of management control have led some scholars to replace the term "control" by "performance" (Nanni et al. 1992; Demartini 2014).

According to some scholars, MA encompasses control and decision-making (Zimmerman 2001; Malmi and Ikäheimo 2003; Malmi and Brown 2008; Taipaleenmäki and Ikäheimo 2013). Specifically, control is composed of planning, administrative and cultural controls, and compensation systems, whereas decision-making is composed of strategic and operational decisions.

[9] Chadwick wrote: "*The aim of management accounting is to provide management with information which help them to: - achieve their objectives/goals; - formulate policy; - monitor and assess performance; - appreciate the financial implications of changes in the internal and external environment in which the organization operates; - plan for the future; - make comparisons between alternative scenarios; - manage more efficiently the scarce resources which are at their disposal; - control the day-to-day operations; - focus their attention on specific issues which really need their consideration; - solve a variety of problems, e.g. investment decisions; - take account of behavioral factors*." (Chadwick 1993: 1).

[10] As regards the themes of management control see also: Anthony (1965), Brunetti (1979), Bandettini (1980), Marasca (1989), Amigoni (1990), Bergamin Barbato (1997), Castellano (2003), Bastia (2008) and Demartini (2014).

[11] "*The management of value creation is followed by the change from the traditional tactically oriented management accounting to the broadly defined strategically oriented accounting such as Economic Value Added, Activity Based Costing/Management, Customer Time Life Value, Value Based Management, Balanced Scorecard and other value-based performance measures*." (Abdel-Kader and Luther 2008: 234).

Within a company, the individual in charge of this flow of internal information and of MA in general is the management accountant or the controller (or the controller's department) (Simons 1995). The controller is the manager responsible for analyzing, interpreting and controlling the internal flow of information, which is the basis of MA. He/she has the following main activities and responsibilities: (1) the production of internal reports that should be submitted, every month, to the board of directors; (2) the involvement in the budgeting, forecasting and cost accounting systems; and (3) the production of the business plans. Furthermore, the controller is responsible for reporting to top managers on the firm's financial operations. For doing so, the controller has relationships with the Chief Executive Officer (CEO) and with the other relevant positions and functions, such as the sales executive or the head of human resources. His/her organizational collocation can change from one firm to the next; in fact, he/she can report to the CEO or be in the same hierarchical line as the CEO (Terzani 1999).

3.2.4 The Link Between Financial Accounting and Internal Control Systems

This section will analyse literature that has identified a first promising link between FA and internal control systems, highlighting a virtuous circle between the two phenomena. The first link between FA and internal control systems arises from the fact that internal control has the main aim of assuring the reliability of all published information (Anderson 1978; Root and Grumman 1998). As shown in Sect. 3.2.1, this purpose is mainly satisfied by the financial statement audit, and therefore by administrative and accounting control. In general, the reliability of firms' overall disclosure allows stakeholders to evaluate the conditions of equilibrium and improve the reputation level of a firm (Kapardis and Anderson 1995).

As a matter of fact, the main limits of the reliability of financial statements regard errors, uncertainty and indeterminacy, which could affect the preparation of the FA flow of information, since FA information is prepared by humans, and thus both intentional and non-intentional errors may occur. Furthermore, firms operate within a sector and an environment; therefore a certain degree of uncertainty and indeterminacy is natural (Cattaneo 1959; Anderson 1978). In this regard, the Auditing Guideline on Internal Controls (n. 3.240: 2) agreed with the academics' position stating that "*management is frequently in a position to override controls which it has itself set up...any system of internal control is always subject to the possibility of human error*".

However, even if mandatory disclosure is subjected to external judgments by audit firms, for the other documents which are not subjected to legal constraints it is more difficult to express a judgement, given that no sanctions are provided (Ferrero 1959; Meek et al. 1995).

The above-mentioned link between FA and the administrative and accounting control became essential, especially after regulatory changes under SOX in the

U.S. and after other similar laws in other countries (such as Law 262/2005 in Italy), enacted to prevent scandals and financial collapses (such as Parmalat, Enron, WorldCom, etc.). As a matter of fact, the main factor in the aforementioned financial collapses may be associated with a lack of reliability in the FA due to weaknesses in the administrative and accounting controls.[12] In the U.S., empirical research on this topic became particularly developed after SOX, because it was easier to analyse the administrative and accounting control. As a matter of fact, before SOX weaknesses in internal control were especially related to a change in auditor; therefore, they were rarely reported in the financial statements (Doyle et al. 2007a).

Furthermore, the link between the two areas is reinforced by other studies (discussed below) which analysed to what extent a change in the FA standards could affect the quality of the accounting system, the quality of the administrative and accounting control and the quality of the internal control in general.

In detail, some literature has analysed the effects of the adoption of the IAS/IFRS on the quality of the accounting system (Soderstrom and Sun 2007; Christensen et al. 2015; Paananen and Lin 2009; Gebhardt et al. 2011; Liu et al. 2011). Soderstrom and Sun argued that the quality of the accounting system depends on cross-country differences concerning the legal and political system of the country (Soderstrom and Sun 2007). Liu et al. found that the mandatory adoption of IAS/IFRS led to better quality in the accounting system. They measured the quality of the accounting system from three perspectives: (1) earnings management; (2) timely loss recognition; and (3) value relevance. They found that, after the mandatory IAS/IFRS adoption in Australia, earnings management was reduced, the value relevance of financial statement information was improved, and the timely loss recognition was improved as well. Christensen et al. found similar results (Christensen et al. 2015; Liu et al. 2011). Gebhardt et al. carried out a similar analysis as that of Liu et al., even if they focused on the banking industry after the recent financial crisis (Gebhardt et al. 2011).

Nonetheless, other authors found different results for similar topics, such as Paananen and Lin, who found exactly the opposite results as Liu et al. and Christensen et al., since they demonstrated that the mandatory adoption of IAS/IFRS caused a worsening in the quality of accounting systems (Christensen et al. 2015; Paananen and Lin 2009; Liu et al. 2011).

Doyle et al. examined the relationship between accruals quality and internal control, finding that weaknesses in internal control are correlated to poorly estimated accruals not realized (as cash flow). Furthermore they found that this correlation is driven by a low level of corporate disclosure (Doyle et al. 2007b).

[12] A material weakness in internal control is "*a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected*" (PCAOB 2004). Weakness may be caused by both intentionally biased accruals and unintentional errors in accrual estimation. On internal control, see also Mautz and Sharaf (1961). Scholars have emphasized the role of personnel within the administrative and accounting control.

Other recent studies have identified a link between the reliability of financial statements and the quality of internal control; some authors have found that perceived improvements in earnings quality are driven by improvements in the internal control system (Altamuro and Beatty 2010). However these considerations seem to explicitly cover just the link between FA and the part of internal control directly responsible for assuring the reliability of corporate disclosure (administrative and accounting control). Similarly, another literature stream has identified initial promising evidence on the link between the development of FA disclosure and trends in MA, as shown in the next section.

3.2.5 The Virtuous Circle Between the Forward-Looking Perspective of Financial Accounting and Forward-Looking Management Accounting

The existence of FA and MA information tends to create two different circuits of information within a firm. The former is mainly addressed to external users, whereas the latter is essentially addressed to internal users (Popa-Paliu and Godeanu 2007). Nonetheless, these two areas cannot be considered completely separated (Hemmer and Labro 2008). As shown in Chap. 2 of the present work, FA has evolved towards forward-looking and non-financial information. Similar considerations could be made for MA, as shown below.

The literature about the development paths which have affected MA information is particularly wide; most recently, scholars have discussed on the changing role of MA practices and tools and who is in charge of this (the controller), highlighting that the controller is an active advisor of top management and an increasing participant in decision-making, and not simply a "*bean counter*" (Kaplan 1995; Granlund and Lukka 1997; Malmi et al. 2001; Burns and Baldvinsdottir 2005; Järvenpää 2007).

This new pervasive orientation of MA and the new and wider role for the controller should entail that MA involves the whole organization and affects several internal matters, as suggested from a part of the literature (Jonsson 1996; Scapens and Jazayeri 2003). Furthermore, scholars have highlighted that Information Technology (IT), especially in the form of Enterprise Resource Planning (ERP), could support the diffusion of MA culture in the whole organization. As a matter of fact, even if the introduction and the diffusion of ERP represents a huge investment, ERP systems do not involve only the informatics field, but the entire organization (Cooke and Peterson 1998).[13]

In this framework, a stream of literature about this topic has investigated the state of art regarding MA theories and research (Ittner and Larcker 2001; Zimmerman 2001; Hopwood 2002; Luft and Shields 2002; Malmi and Granlund

[13] For further insights about ERP see Chap. 4 of the present book.

2009). In this regard, academics have pointed out a number of unresolved questions and attempted to provide some answers. The main concerns regard the existing gap between theories and practices (Mattessich 1995; Inanga and Schneider 2005).

Specifically, Zimmerman and Luft and Shields have focused on the fact that MA theory especially regards the causes and the effects of MA (Zimmerman 2001; Luft and Shields 2002); Hopwood focused on MA practices (Hopwood 2002); Ittner and Larcker and Malmi and Granlund focused on the call by the academic communities for an improvement in current MA practices and the introduction of new and better MA practices (Ittner and Larcker 2001; Malmi and Granlund 2009). However, MA practices and the possibility of improving them, depend on firms' features and management culture (Harrison and McKinnon 1999; Järvenpää 2007[14]).

According to Malmi and Granlund, MA research and theories have focused on the relationships with other fields of study, such as economics, organization, sociology and psychology (Malmi and Granlund 2009). In this framework, Gordon and Narayanan found that the perception of the relevance of external, non-financial and ex-ante information is positively correlated to the perception of the environmental uncertainty (Gordon and Narayanan 1984). Since nowadays, it is impossible to leave out the environmental uncertainty,[15] these findings have highlighted the growing relevance of forward-looking information systems within MA (Taipaleenmäki and Ikäheimo 2013). In this regard, Taipaleenmaki and Ikaheimo stated that "*recently MA has evolved from backward-looking control purposes towards forward-looking information systems for strategic planning and control, and for decision-making*"[16] (Taipaleenmäki and Ikäheimo 2013: 324). Their research was inspired by the work by Hemmer and Labro (2008). In fact, for the first time, in 2008, Hemmer and Labro expressed their doubts and concerns that the previous literature has treated FA and MA as different and separate fields of research. In their work, they showed that financial reporting is able to affect the quality of MA, highlighting that these two areas are not independent.[17] This could occur due to the fact that FA and MA have similar purposes. As a matter of fact, FA encompasses control and decision-making just as MA does. Specifically, FA control regards the fact that management is accountable to stakeholders (stewardship accounting), whereas FA decision-making regards the decisions taken by investors on the basis of disclosed information (Hemmer and Labro 2008). They have also pointed out that the need for a convergence of FA and MA is particularly

[14] Harrison and McKinnon explored the cultural effects on management control systems through a quantitative analysis (Harrison and McKinnon 1999); whereas Järvenpää explored the same topic by using a longitudinal case study method (Järvenpää 2007).

[15] Environmental uncertainty is becoming more and more relevant to the firm especially due to "*globalized competition, business networks, and the increased importance of securities markets as allocation mechanisms for financial resources*" (Taipaleenmäki and Ikäheimo 2013).

[16] With regard to the growing relevance of future-oriented information for MA see also Granlund and Lukka (1998), Cadez and Guilding (2008) and Goretzki et al. (2013).

[17] Hemmer and Labro declared: "*We show that, contrary to the standard textbook proposition, properties of management and financial accounting systems are not independent.*" (Hemmer and Labro 2008: 1209).

high for those companies oriented toward investors, such as companies that have adopted IAS/IFRS.

This section has thus revealed that a forward-looking perspective of FA could lead to forward-looking MA, and vice-versa, thereby producing an interesting virtuous circle between FA and MA. "*Accounting is a changing phenomenon, where both management accounting (MA) and financial accounting (FA) activities, technologies and concepts are continuously evolving and redefining themselves, and are becoming increasingly intertwined, converging realities*" (Taipaleenmäki and Ikäheimo 2013: 321).

While these studies have revealed the need for a convergence between the two above-mentioned areas, some doubt remains about the possible success of this integration. Furthermore, the overlapping areas have not been clarified and deserve a deepened examination (Ikäheimo and Taipaleenmäki 2010[18]).

3.3 Premises for the Convergence

On the basis of the aforementioned considerations, the aim of this section is to carry out a literature review about the possible influences that FA may have on MA, in order to better define the relationships between the two areas. The following questions arise from the considerations of the previous section: Is FA (in particular the external financial reporting) useful for internal managerial purposes? Are MA techniques and tools useful in supporting FA? Does the convergence of FA and MA depend on the country in which the company operates?

The next section discusses the literature review on these topics and attempted to answer the abovementioned questions, thereby underlining the premises for the convergence of MA and FA in an international (Sect. 3.3.1) and in an Italian setting (Sect. 3.3.2).

3.3.1 Premises for Convergence in an International Setting

Even if the issue of the convergence of FA and MA is quite recent, premises for convergence in an international setting are, however, not so new. The initial relationships arise from the debate about the interaction between external financial reporting requirements and management information (and MA in general).

According to some scholars, the integration between FA and MA may be achieved on different levels; e.g. the level concerning data recording or the level

[18] "*These two separate fields are currently converging but not converged, i.e. there is already an intersection where these disciplines are heavily overlapping, but are and potentially will never be fully (re)-integrated*" (Ikäheimo and Taipaleenmäki 2010: 3).

concerning the evaluation of data useful for both external and internal purposes (Kaplan 1984; Drury and Tayles 1995; Joseph et al. 1996).

Johnson stated that MA practices and tools had become subservient to the needs of FA (Johnson 1991); Drury and Tayles have observed that rules established for external reporting can also be used for internal reporting (Drury and Tayles 1995). Furthermore, some studies have found that development paths that have affected FA could affect MA as well (Scherrer 1996; Virtanen et al. 1996).

However, on the contrary, Joseph et al. found through a questionnaire survey addressed to management accountants working in U.K. industrial and commercial firms that requirements that affect financial reporting useful for external purposes does not have a deep influence on the structure and the design of internal managerial system. Nonetheless, scholars agree there is an interesting relationship between information useful for external purposes and internal and managerial information. They also agree that this relationship deserves to be more closely examined (Joseph et al. 1996). In a similar vein, more recently Cohen and Karatzimas have found that if IFRS are perceived as relevant for efficient MA information, they tend to affect MA in terms of decision-making and performance measurement systems in Greek companies[19] (Cohen and Karatzimas 2013). Furthermore, in this regard Procházka has expressed his opinion by pointing out that the adoption of IFRS in the preparation of financial reporting has been shown to affect MA practices (Procházka 2012).[20] More specifically, authors have identified the point of convergence between the two above-mentioned systems in the goal of MA practices to create value not only to the benefit of owners (shareholders), but also for a number of stakeholders (such as customers, employees, etc.). This point is considered to be the starting point for a promising integration of FA and MA in view of favouring the creation and development of a unique system, so that management and internal reporting systems may be usefully interfaced with FA for external purposes. This happens mainly because information produced for external markets is considered not only to be relevant for decision-making but also to the beneficial for management control systems (see also Hemmer and Labro 2008).

Furthermore, on the basis of the theoretical research and assumptions developed by Hemmer and Labro, Weißenberger and Angelkort, H. have focused their analysis of the effects of the integration of financial and management accounting on controllership effectiveness (Weißenberger and Angelkort 2011). To test their research hypotheses, they used a survey of 1,500 German firms, finding no direct effect between the integration of accounting systems and controllership output quality, measured by the managers' perceived quality of the controlling department.

[19] Similarly Angelkort et al. stated that the "*IFRS focus on providing decision support for investors. In consequence, IFRS are much more suitable for internal decision-making and control purposes. Secondly, IFRS rely heavily on information provided by the managerial accounting systems*" (Angelkort et al. 2008: 4–5).

[20] They even argued that "*IFRS are becoming the leading principles of management accounting*" (Procházka 2012: 871).

Surprisingly, they found an indirect correlation between these two variables, a relationship that is fully mediated by the consistency of financial language, measured by managers' perceived quality of the FA information produced by the integrated accounting system (Weißenberger and Angelkort 2011). More generally, international studies have shown the existence of a link between FA and MA systems through an integrated accounting system able to cover both MA and FA aspects (Jones and Luther 2005; Ikäheimo and Taipaleenmäki 2010; Weißenberger and Angelkort 2011). While the prior literature review agreed on the fact that FA is able to affect MA, few studies appear to have been carried out on the inverse relationship,[21] according to which MA is able to affect the evolution of FA information. Despite these considerations, Stewart argued that the stimuli coming from the MA area are generally incorporated in the financial reporting (Stewart 1999).

3.3.2 Premises for Convergence in the Italian Setting

The issue of the convergence of MA and FA in the Italian context is quite recent. In fact, in Italy a deep divergence between FA and MA is rooted in the Italian tradition of Economia Aziendale (Business Administration) (Zambon 2011), in which internal matters (such as cost accounting tools and practices) are kept apart from the FA system, thus creating and maintaining two separate accounting systems (Bergamin Barbato et al. 1996).

Quite recent Italian literature on this topic has highlighted interesting relationships between the development paths that affect FA information (especially after the introduction of IAS/IFRS) and consequent changes in internal control systems, in control activities and in IT (Cantino and Devalle 2005; Andrei 2006; Marchi et al. 2008; Marchi and Potito 2012; Trucco 2014).

Cantino and Devalle and Andrei found that IAS/IFRS have a great effect on managerial and administrative aspects and on IT (Cantino and Devalle 2005; Andrei 2006). Marchi et al. have found that the introduction of new financial reporting standards (IAS/IFRS) have produced effects on accounting and administrative procedures and on internal control system in general. As a matter of fact, adjustments have been observed in technical-accounting issues (e.g. the design of new charts of accounts, the updating of reports and the introduction of new reporting practices), in performance indicators, in organizational control and in management information systems. These changes are mainly explained by the different approaches and notions underlying international and national accounting standards (e.g. the discounting of future cash flows and the use of valuation criteria

[21] As a matter of fact, very few and preliminary studies explain if financial reporting may be affected by MA practices (in this regard, see also Hopper et al. 1992).

like the fair value in IAS/IFRS, which departs from the principle of historical cost, typical of Italian GAAP) (Marchi et al. 2008). In a similar vein, Marchi and Potito have explored the effects that fair value accounting has on managerial control in Italian listed companies. They found that companies tend to use the same evaluation methods for financial reporting and for internal reporting, smoothing over any differences between the two systems. Therefore, it could happen that whenever there is a change in the evaluation methods of financial reporting, there is also a change in the internal reporting. Furthermore, they found that the new vision of fair value has introduced new control tools in order to verify the assumptions of the fair value evaluations (this is possible, for instance, through business intelligence software). They concluded by identifying some considerations that arise from the new standards affecting FA: (1) an increase in the fluctuations in the economic performance of firms; (2) the need to have greater frequency in control activities; (3) the relevance of the reliability of forecasting tools; and (4) a possible approach between managerial and accounting evaluation logics (Marchi and Potito 2012).

Basis on the above-mentioned research, Trucco have explored how the weaknesses and deficiencies of internal accounting control due to the evolution of FA information are managed by managers in the Italian listed companies (Trucco 2014).

Furthermore, in Italy, the recent literature on this topic has produced some argumentation and preliminary evidence on the possible alignment between FA and MA (Cinquini and Tenucci 2011; Quagli 2011; Zambon 2011).

Zambon introduced the term "*managerialisation*" of financial reporting,[22] identifying interesting and promising avenues for accounting research and practice. He based his argumentation on international theories, which pointed out interconnections between FA and MA and the benefits that MA research may have due to the aforementioned interconnections.

In fact, Zambon underlined that the "*managerialisation*" of FA may lead to at least four challenging consequences for a company. The first challenge could be linked to the image and use of FA information, since if a company uses internal information for external purposes, such information is potentially less neutral and difficult to compare. The second challenge regards the language of FA and MA, since the same aspect can be analysed from a twofold perspectives, which can help to capture the advantages of the two different viewpoints and join them together in a new and innovative perspective. The third challenge regards the possibility for FA to open the frontiers to other fields of study, such as marketing, corporate governance, strategy and so on.[23] This extension could bring about some problems

[22] Zambon stated: "*Hence, rather than a simple convergence process as proposed and analysed by* Hemmer and Labro (2008) and Ikäheimo and Taipaleenmäki (2010), *we would be actually facing more a transformation and enlargement of financial accounting towards a broader business reporting encompassing also managerial and non-financial data and valuations, where management accounting is enriching and completing traditional financial accounting data*" (Zambon 2011: 9).

[23] For further information about this matter see also Miller (1998).

Fig. 3.2 The convergence of financial accounting and management accounting (*Source*: author's presentation)

regarding the reliability and assurance of information contained in the new financial reporting. Finally, the fourth challenge regards the fact that the "*managerialisation*" of FA seems to lead to the development of new university and professional curricula and new techniques and tools for the FA, auditing and financial analysis fields (Zambon 2011).

In this setting, Quagli opened interesting research avenues regarding the possibility of overcoming the traditional barriers between financial and management accounting by exploiting goodwill accounting and impairment test. According to his perspective, FA practices (the identification of CFUs, goodwill allocation, etc.) became, in fact, opportunities for MA changes, whereas the structure of CGUs, asset allocation and other typical activities of MA can be viewed as potentialities which may be exploited by financial accountants, even in providing additional disclosure for markets (Quagli 2011).

Furthermore, Cinquini and Tenucci analyzed the potential of MA in providing financial and non-financial information within the framework of the management commentary.[24] Hence, they identified day-by-day activities that linked the management accountants with the financial accountants, increasing the overall value performance information perceived by these managers (Cinquini and Tenucci 2011).

The above-mentioned literature in the Italian context confirmed the trend explored in an international setting. Therefore, while the previous literature review agreed on the fact that FA is able to affect MA (especially thanks to the introduction of IAS/IFRS[25]), few studies appear to have been carried out on the inverse relationship, according to which MA is able to affect the evolution of FA information (see Fig. 3.2).

[24] For further analysis on the management commentary see also: Silvi and Bartolini (2011).

[25] With regard to the role of IAS/IFRS in the convergence of FA and MA, see Chap. 4 of the present book.

3.4 Convergence or Divergence of Financial Accounting and Management Accounting: Differences Among Countries and Cultures

Even if a convergence process of FA and MA seems to be fundamental and inexorable, some scholars continue to stress the differences between the two fields of study and the possible factors which may lead to divergence, such as different cultural and geographical contexts and different eras of analysis (Popa-Paliu and Godeanu 2007; Ikäheimo and Taipaleenmäki 2010; Eierle and Schultze 2013).

Eierle and Schultze have highlighted implicit differences in qualitative features of information within FA and MA. According to this authors, one of the most important differences between FA and MA regards the verifiability of information, since FA information should be reliable in satisfying external interests,[26] whereas MA information may be more subjective, thus implying a lower degree of verifiability (see also Atkinson et al. 2004).

Another relevant difference between FA and MA information may regard the timeliness in providing information, since the former is generally provided ex-post (annually, half yearly or quarterly),[27] whereas the latter should be promptly provided to the top management. Furthermore, the former is mainly based on historical and financial information,[28] whereas the latter is mainly based on forward-looking and non-financial information (Hampton and Karadbil 1968; Hansen and Mowen 1994; Atkinson et al. 2004). Further difference between FA and MA information is related to the final users of information. In fact, in FA users are external stakeholders, particularly interested in aggregated data useful in evaluating firms' performance; whereas in MA users are internal managers, interested in detailed data (Ijiri 1995). However, even if FA and MA information has different qualitative features, managers usually extract both kinds of information from the same accounting database (Hansen and Mowen 1994). Firms could have different accounting databases, one for FA and the other for MA, or a single one. The first solution implies huge costs, which small entities, in particular, are not able to maintain. In these situations, small firms seem to prefer to have a unique database and to use financial information that is useful for external users and for internal managerial aims (Carsberg et al. 1985; Barker and Noonan 1996; Collis and Jarvis

[26] See also, among other works: Benston (2008), FASB (2010) and IASB (2010).

[27] For further details about this topic, see also: Hansen and Mowen (1994) and Atkinson et al. (2004).

[28] Even if some authors have emphasized this difference between FA and MA information, Chap. 2 of the present work, has pointed out that the development paths of FA have led to an increase in voluntary disclosure in terms of forward-looking and non-financial information. This has progressively reduced the gap between the goals of the two areas mentioned. To confirm this, professional associations and scholars have underlined the relevance of forward-looking and non-financial FA information also for external users (AICPA 1994; Rees and Sutcliffe 1994; Lev and Zambon 2003). Inevitably, this may lead to the emergence of problems linked to the verifiability and reliability of such kinds of FA information (AICPA 1994).

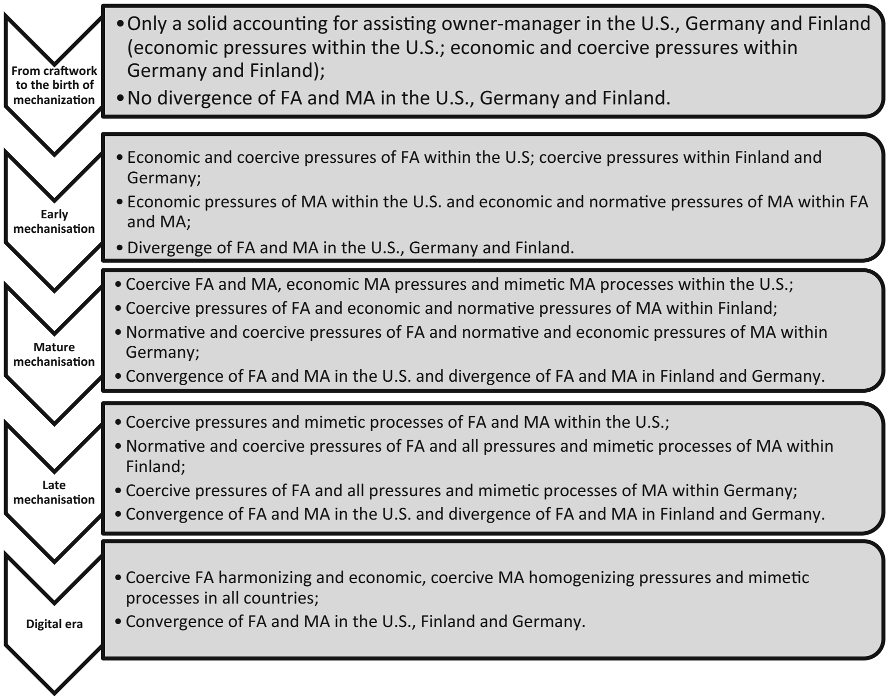

Fig. 3.3 Divergence and convergence of Management Accounting and Financial Accounting: an analysis based on institutional theory (*Source*: adapted from Ikäheimo and Taipaleenmäki 2010: 355–364)

2000). With regard to this delicate trade-off, Zambon and Zan and Bergamin Barbato et al. agreed that a possible solution was to have two different accounting systems, which would need to be reconciled by using ad hoc-accounts (Bergamin Barbato et al. 1996; Zambon and Zan 2000).

Other studies have provided examples and investigated the causes of the divergence of MA and FA, finding that the convergence/divergence process may be affected by geographical and cultural features. In particular, these studies essentially focused their analysis on the U.S., German and Finnish contexts (Ikäheimo and Taipaleenmäki 2010).

Ikäheimo and Taipaleenmäki attempted to explain the divergence and the convergence process of FA and MA in light of institutional theory,[29] identifying different steps on the basis of the era of analysis, as shown in Fig. 3.3. As a matter of fact, during the craftwork era, the U.S., Germany and Finland had only a solid accounting for assisting owners and managers; thus, there was no divergence between FA and MA (see also Eierle and Schultze 2013). During the early era of

[29] For further details about institutional theory, see Sect. 2.5.1 of the present work.

mechanization, the divergence of FA and MA took place. In particular, during that era the U.S. did not have strict standards to prepare and disclose financial reporting (see also Barton and Waymire 2004; Watts and Zimmerman 2006). In turn, MA needed to develop its own tools and techniques to manage and to evaluate business activities (see also Fleischman and Tyson 1993). Since 1880s, MA has been impacted by a number of changes and innovations, such as standards and costing methods, budgeting, transfer pricing, etc. (Kaplan 1984; Hopper and Armstrong 1991). Ikäheimo, and Taipaleenmäki argued that, in the U.S. the divergence of FA and MA was affected by the different development paths of both FA and MA[30] (Ikäheimo and Taipaleenmäki 2010).

In Germany, Ewert and Wagenhofer underlined that companies began to develop MA systems separately from FA, since FA was not able to satisfy internal and managerial goals. This happened, in particular, during the twentieth century (Ewert and Wagenhofer 2006).

In Finland (as well as in Germany), the divergence of MA and FA was determined by the coercive pressures of financial reporting (mainly based on the prudence principle) that led to the necessity to develop different MA systems, closer to the internal goals (Ikäheimo and Taipaleenmäki 2010).

In the U.S. and Germany the situation dramatically started to change beginning in the 1930s, when companies were shocked by a deep economic crisis (mature mechanization era in Fig. 3.3). In turn, legislation introduced new standards and new rules in preparing financial reporting in order to increase transparency[31] (Eierle 2005). In the U.S., managers thus attempted to adopt these new financial rules to manage internal goals (Kaplan 1984; Johnson and Kaplan 1987; Drury and Tayles 1997; Jones and Luther 2005). In Germany, MA development paths did not lead to a convergence of FA and MA (see also Ewert and Wagenhofer 2006).

During the same period, in Finland an integration process between FA and MA began, even if this integration involved only the level of data, so that the same data could be used for both internal and external purposes (Ikäheimo and Taipaleenmäki 2010). Some authors have thus demonstrated that the integration process depends on geographical contexts and era. They have stated that such diversity among countries was particularly high during the mature mechanisation era.

During the late mechanisation period in the U.S., financial standards were used for internal purposes, which affected managerial decisions (Prakash and Rappaport 1977). MA was thus mainly considered subservient to financial accounting practices (Kaplan 1984; Johnson and Kaplan 1987). In Germany as well as in Finland, FA and MA remained separate from each other, since their development paths were significantly divergent from each other. As a matter of fact, in Germany and Finland

[30] "*However, their divergence seems to be a result of the economic and coercive pressures of FA, and the economic pressures of MA*" (Ikäheimo and Taipaleenmäki 2010: 356).

[31] "*In the U.S., the federal state took the initiative to set financial reporting standards. They were based on historical costs and highlighted the role of the income statement. Investor protection was the major justification for financial reporting regulation.*" (Ikäheimo and Taipaleenmäki 2010: 358).

MA innovations were deeply different from FA tools (see also Ewert and Wagenhofer 2006).

During the digital era (from the 1990s), the harmonization process of financial standards became relevant, since it was functional to facilitating the comparison of financial statements of firms in different countries. Financial standards evolved from the backward-looking historical perspective to a forward-looking fair value one[32] and the internal managerial perspective became relevant even for accounting standards. Therefore, during the digital era the development paths of FA and MA began to run in the same direction "*in all countries which have adopted fair value accounting in financial statements*"[33] (Ikäheimo and Taipaleenmäki 2010: 363).

Nowadays other scholars have also identified a new era in which MA should become more relevant and not merely serve as a borrower of data to FA (DiPiazza et al. 2006; Zambon 2011). In this regard, Zambon has defined a new era, using the following term: the *managerialisation of financial reporting* (Zambon 2011: 9).

The differences among countries and cultures could be explained in light of Hofstede's model (Hofstede et al. 1990; Hoftede et al. 2010[34]), which explain how values in the workplace are influenced by culture.

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[32] In this regard, see also Chap. 2 of the present work.

[33] "*…in FA, fair values are based on future cash flows from assets and in MA, leading indicators are strategic performance measures. For estimating fair values used in FA, future-looking MA information is required*." (Ikäheimo and Taipaleenmäki 2010: 363. See also: Jones and Luther 2005; Hemmer and Labro 2008).

[34] Hofstede's model is available at the following website: http://www.geert-hofstede.com/hofstede_dimensions.php. The Hofstede dimensions of national culture are: (1) power distance; (2) individualism versus collectivism; (3) masculinity versus femininity; and (4) uncertainty avoidance. In his website, he defined culture in the following way: "*Culture is the collective programming of the mind distinguishing the members of one group or category of people from others*". Furthermore, he introduced the concept of Organisational Culture, which "*can be defined as the collective programming of the mind that distinguishes the members of one organisation from others*." This model developed by Bob Waisfisz and Geert Hofstede encompasses six autonomous dimensions (variables) and two semi-autonomous dimensions: (1) means-oriented vs. goal-oriented; (2) internally driven vs. externally driven; (3) easygoing work discipline vs. strict work discipline; (4) local vs. professional; (5) open system vs. closed system; (6) employee-oriented vs. work-oriented; (7) degree of acceptance of leadership style; and (8) degree of identification with your organization.

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Chapter 4
Drivers of the Alignment of Financial Accounting to Management Accounting

4.1 Introduction

The previous sections discussed the premises for the alignment between Financial Accounting (FA) and Management Accounting (MA), with a special focus on the Italian setting. Section 4.2 will instead explore institutional theory, which could be used in supporting the convergence of process between FA and MA. Sections 4.3 and 4.4 will analyze the point of view of practitioners and academics with regard to the practical drivers that could be used in explaining the alignment of FA to MA, underlining that both IAS/IFRS and Information Technology (IT) are relevant issues in this convergence process.

4.2 Institutional Theory in Support of the Convergence Process of Financial Accounting and Management Accounting

As shown in Chap. 2, institutional theory could be the basis for explaining changes which affect the accounting procedures, methods and techniques, accounting information systems, information flow, and the functions and roles of accountants (see also: Meyer and Rowan 1977; DiMaggio and Powell 1983; Taipaleenmäki and Ikäheimo 2013).[1]

In a similar vein, institutional theory could be the basis for explaining the development paths which affect MA tools and practices, and even, the basis for explaining the alignment of FA to MA.

[1] Chapter 2 demonstrated that institutional pressures could affect both the objective and the subjective dimension of FA. Institutional pressures may be classified into four main categories: coercive, normative, mimetic and economic.

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As seen in Chap. 2, examples for firms of coercive pressures which could bring about relevant changes in FA may be represented by legal and technical requirements requested by the government, such as financial reporting requirements. In terms of MA, coercive pressures could be linked, for instance, to the vicissitudes of the budget cycle, which could produce innovations in managerial techniques and methods (DiMaggio and Powell 1983). In circumstances where the above-mentioned coercive pressures affecting FA and MA run in the same direction, alignment between FA and MA may be undertaken; otherwise if they run in two different directions a divergence of the two aforementioned systems may be undertaken (Ikäheimo and Taipaleenmäki 2010).

As seen in Chap. 2, examples of normative pressures which could bring about relevant changes in FA may regard the possibility of hiring people from other organizations that could bring innovative tools in order to elaborate and produce FA information. In this regard, individuals could also bring their positive or negative past experiences and practices in producing and disclosing forward-looking and non-financial information. Similar considerations could arise for MA; in fact, hiring people from other firms could be positive, since new hires may bring their experiences with regard to MA information and practices. For instance, MA innovations could regard the introduction and the use of advanced methods, such as the balanced-scorecard.[2] Therefore, examples of normative pressures, which could bring an alignment between FA and MA, may regard the possibility of copying some solutions, with little expense and effort, from other organizations that have already found the solution for the same problem. This could happen especially in an uncertain environment (Cyert and March 1964; DiMaggio and Powell 1983). Another example of normative pressures, in terms of both FA and MA, could be the hiring of personnel from firms within the same industry with the aim of improving internal processes (DiMaggio and Powell 1983).[3] This process could foster the convergence between FA and MA, if new employees have past experience in this field.

Finally, as seen in Chap. 2, examples of mimetic pressures, which could bring about relevant changes in FA, involve the possibility of imitating similar organizations in producing and disclosing additional information. Similar considerations could arise for MA. In addition, the imitation could also facilitate the convergence process of FA and MA (DiMaggio and Powell 1983; Ikäheimo and Taipaleenmäki 2010).

According to this framework, the aforementioned pressures could affect the development paths of both FA and MA and, thereby, foster the alignment of FA to MA.

[2] For further information about the balanced scorecard, see: Kaplan and Norton (1995, 1996, 2006).

[3] See also March and March (1977).

4.3 The Viewpoints of Professional Associations and Academics

Professional associations and academics agree that the introduction of IAS/IFRS in the worldwide annual reports of firms and, in particular, the new fair value perspective may foster the alignment process of FA to MA. The following sections focus on the literature on this topic, underlying the relevant contributions made by the international professional associations to the convergence process. As shown in Fig. 4.1, fair value is a consequence of the adoption of IAS/IFRS, as better explained in the following section.

4.3.1 IAS/IFRS: A Possible Driver of the Convergence Process Between Financial Accounting and Management Accounting

Most of the literature concurs that the harmonization of financial reporting standards has fostered the convergence process between FA and MA (Jermakowicz 2004; Jones and Luther 2005; Marchi et al. 2008; Procházka 2011; Quagli 2011; Zambon 2011; Marchi and Potito 2012; Taipaleenmäki and Ikäheimo 2013). As a matter of fact, Jermakowicz noted significant changes in internal and external reporting due to the adoption of IAS/IFRS (Jermakowicz 2004). In a similar vein, Jones and Luther identified innovations in MA practices and integration between financial and management accounting systems as a consequence of IAS/IFRS adoption (Jones and Luther 2005). Prochazka stated that IAS/IFRS could be considered as a driver of such convergence process (Procházka 2011). In particular, financial reporting standards that have mainly affected convergence regard

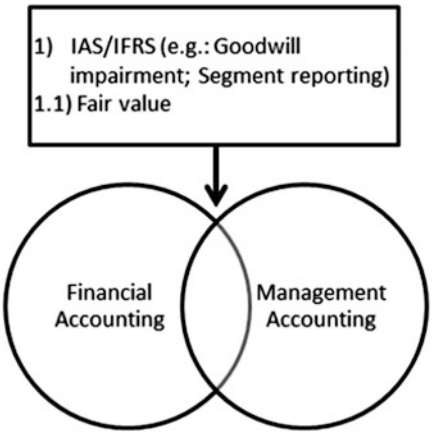

Fig. 4.1 IAS/IFRS and fair value: their role in the alignment of FA to MA (*Source*: author's presentation)

goodwill impairment and segment reporting (Marchi et al. 2008; Taipaleenmäki and Ikäheimo 2013).

Goodwill may be defined as an intangible asset, the value of which is the result of the negotiation between two companies when one company acquires another one. Such value thus represents the going concern value of the acquired company (Johnson and Petrone 1999; Troberg 2007; Petersen and Plenborg 2010). In detail, IFRS 3 and IFRS 36 require that acquired assets, liabilities and contingent liabilities are recognized at fair value in the annual report of the acquiring firm. If the fair value is less than the purchase price, the difference is the goodwill. According to IFRS, goodwill is never amortized, even if the managers have the responsibility to evaluate the goodwill value every year, in order to decide if the impairment is necessary. The impairment test is mainly based on the future estimates of cash flows; and thus, in carrying out this test it is necessary to have support from MA techniques (Hemmer and Labro 2008; Taipaleenmäki and Ikäheimo 2013).[4] As Taipaleenmäki and Ikäheimo have stated, the main aim of FA is to support shareholders in their decision-making by assuring fair values of goodwill (Taipaleenmäki and Ikäheimo 2013). In this regard, Quagli has stated that: "*Through the impairment test, management accounting feeds financial accounting. But the opposite is true also: the necessity to test goodwill for impairment could impose the introduction of managerial techniques able to develop new and value-based oriented management accounting practices*."(Quagli 2011: 17). According to his perspective, FA practices (the identification of CFUs, goodwill allocation, etc.) became opportunities for MA changes, whereas the structure of CGUs, asset allocation and other typical activities of MA can be viewed as potentialities which may be exploited by financial accountants, even in providing additional disclosure for markets (Quagli 2011).

As anticipated at the beginning of the current section, segment reporting could also represent a factor that may foster the convergence process between MA and FA. In particular, segment reporting standards (IFRS 8, operating segment) requires particular classes of entities (essentially those with publicly traded securities) to disclose information about their operating segments,[5] products and services, the geographical areas in which they operate, and their major customers. Such types of information are based on internal managerial reports, in the direction of both the identification of operating segments and the measurement of disclosed segment information (for further details on segment reporting see, among others: Bens et al. 2011; Nichols et al. 2013). The alignment of FA to MA is therefore implicit

[4] In practice, it is necessary to have support from MA, in the form of budgets concerning the near future, as well as the latest estimates and forecasts (Taipaleenmäki and Ikäheimo 2013).

[5] An operating segment is a component of an entity: "*that engages in business activities from which it may earn revenues and incur expenses (including revenues and expenses relating to transactions with other components of the same entity) whose operating results are reviewed regularly by the entity's chief operating decision maker to make decisions about resources to be allocated to the segment and assess its performance and for which discrete financial information is available*." (IFRS 8.2).

in the IFRS 8, since it requires that information useful in producing financial reporting be based on the internal managerial reports. IFRS 8 thus requires some changes in MA processes, tools and reporting, since it requires that operating segments should be in line with the internal structure of a firm. Hence, FA and MA information should be aligned and integrated. It is possible to conclude that, consistent with the viewpoints of other researchers, through IFRS 8, MA facilitates changes in FA and, at the same time, FA motivates changes in MA (Taipaleenmäki and Ikäheimo 2013). In these circumstances, managers perceive the need to align MA and FA deadlines, especially for information that is forward-looking (Hemmer and Labro 2008).

Furthermore, other international standards may foster the alignment between FA and MA, such as IAS 32 and IFRS 9, which regard the disclosure needed for financial instruments; IAS 12, which regards income taxes; and IAS 40, which regards investment property (Ikäheimo and Taipaleenmäki 2010; Zambon 2011). Specifically, IAS 32 and IFRS 9 support the convergence of FA and MA, especially for forward-looking information required for impairment and hedge accounting; IAS 12 supports such convergence due to the necessity of having internal information in order to define a business combination for financial asset valuations; IAS 40 supports convergence due to the necessity of having advanced accounting systems to evaluate fair value, mainly based on managerial information.

Part of the literature has observed that firms can voluntarily adopt IAS/IFRS, since they are considered to be superior to most local GAAPs (Ashbaugh and Pincus 2001; Leuz 2003; Ding et al. 2007; Barth et al. 2008; Daske et al. 2008).

Daske and Barth et al. found a decrease in the cost of capital for firms that have voluntary adopted IAS/IFRS in the year IAS were adopted (Barth et al. 2008; Daske et al. 2008), whereas Ashbaugh and Pincus found that analyst forecast accuracy improves after IAS adoption (Ashbaugh and Pincus 2001). Moreover, Barth et al. demonstrated that firms that adopted IAS showed less earning management (Barth et al. 2008), while Karamanou and Nishiotis demonstrated that IAS/IFRS disclosure allows firms to reduce asymmetric information between investors and managers, in accordance with the signalling theory[6] (Karamanou and Nishiotis 2009). The existing literature, in fact, has suggested that a firm is perceived as having high value into the future, if its managers voluntarily increase the level of disclosure (Jovanovic 1982; Verrecchia 1983; Moel 1999; Karamanou and Nishiotis 2009). In a similar vein, Siegel argued that firms are prone to adopting behaviour in a voluntary way, if they expect a positive reputational effect from this behaviour (Siegel 2005). Francis et al. investigated whether the quality of FA could improve through IAS adoption, finding that features of both the firms and countries may affect the voluntary decision of IAS adoption[7] (Francis et al. 2008).

Based on these considerations, even the voluntary adoption of IAS/IFRS could affect the features and the quality of the financial reporting and, in this way, foster

[6] For further insights on signalling theory, see also Chap. 2.

[7] See also Ball (2001) and Kothari (2001).

the alignment of FA to MA for the same considerations mentioned above for the cases in which IAS adoption is mandatory.[8]

4.3.2 *Fair Value: A Possible Driver of the Convergence Process Between Financial Accounting and Management Accounting*

According to the literature, one of the most relevant changes that affects FA information was the shift from historical cost accounting to fair value accounting (Taipaleenmäki and Ikäheimo 2013).

As Landsman stated, fair value became relevant starting from the early 1990s (in the U.S.) due to the evolution of the standard setting, as described in more detail below (Landsman 2007). At that time, the accounting debate regarded the issues surrounding the choice between the historical cost and current value; in particular, if changes in prices are able to affect the balance sheet accounts. Fair value was formally introduced for the first time in 1993 by FASB in order to improve the comparability and the reliability of financial statements, in opposition to other classical evaluation models, essentially based on historical cost.

Under the joint project developed by FASB and IASB, fair value is aimed at meeting two main objectives: informativeness and stewardship. The former is relevant for capital providers in allowing them to efficiently predict future cash flows, whereas the latter assists shareholders in evaluating the actions of managements. Such a joint framework stated that the main aim of financial reporting is to provide relevant information for investors, emphasizing market values and cash flow forecasts[9] (IABS and FASB 2010).

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[8] As seen above, IAS/IFRS are indeed based on managerial information that fosters a possible alignment between FA and MA.

[9] In the U.S., SFAC n. 5 identified five different accounting models that could be used: historical cost, current cost, current market value, net realizable value, and present value of future cash flows. The historical cost is defined as the original transaction value, that is the amount of cash, or its equivalent, paid to acquire an asset, commonly adjusted after acquisition for amortization or other allocations (Hermann et al. 2006; SFAS n. 5, section 67a). The other models represent different measures of fair value, therefore SFAS n. 5 defined different concepts of fair value. Current cost is a replacement cost, which is the amount of cash, or its equivalent, that would have to be paid if the same or an equivalent asset were acquired currently. Current market value is the amount of cash, or its equivalent, that could be obtained by selling an asset in an orderly liquidation. Net realizable value is the non-discounted amount of cash, or its equivalent, at which an asset is expected to be converted, in due course of business, less any direct costs eventually required to make that conversion. The present value is the present or discounted value of future cash inflows at which an asset is expected to be converted. in due course of business, net of present values of cash outflows necessary to obtain those inflows. In the Anglo-Saxon context, the first IASB Framework for the Preparation and Presentation of Financial Statements (1989) had some similarities with FASB's framework. As a matter of fact, similar to FASB, IASB defined fair value in IFRS 13 (May

The accounting standards concerning fair value are: IAS 36 for the impairment test; IAS 39 for financial instruments, and IAS 41 for agriculture firms.

According to the framework set out by FASB and IASB, it is possible to find a relevant distinction in the evaluation of balance sheet items using fair value: the perspective of the financial institutions and the perspective of the industrial companies. In the context of financial institutions, fair value accounting (FVA) regards in particular financial instruments such as assets and liabilities,[10] whereas with regard to the industrial firms FVA is generally applied for the evaluation of property, plant and equipment.

The following considerations can be made for industrial firms.

In the Anglo-Saxon setting, the current rules for the measurement of property, plant and equipment are provided for in IAS 16 and in IAS 40 and 41 for the accounting of investment property and agriculture. IAS 16 allows for the measurement of property, plant and equipment using two different accounting models, if the evaluation is subsequent to the initial recognition. Such models are the cost and the revaluation model. According to the first model, the asset is carried at cost, minus accumulated depreciation and impairment (IAS 16.30), whereas, according to the second, the asset is carried at a revalued amount: its fair value at the date of revaluation less subsequent depreciation and impairment, provided that fair value can be measured reliably (IAS 16.31). Under this model, the revaluations should be carried out regularly, so that the carrying amount of an asset does not differ materially from its fair value at the balance sheet date. Moreover, if an item is revalued, the entire class of assets to which that asset belongs should be revalued (IAS 16, section 34).

In the U.S., revaluation is a violation of U.S. GAAP; in fact, the SEC removed this option and the AICPA stated in 1965 that "*...property, plant and equipment should not be written up by an entity to reflect appraisal, market or current values which are above cost to the entity*" (AICPA 1965: section 17). There is one exception to this rule: SFAS 144 states that an impairment exists when the sum of the undiscounted expected future net cash flow of an asset is lower than its carrying amount (FASB 2001).

2011) as an "exit price" (such as a selling price) using a fair value hierarchy. Furthermore, IFRS defined fair value in a similar way, namely as the amount at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arm's length transaction (IAS, 39).

[10] Regarding assets and liabilities, FASB 157, Fair value Measurements, (September, 2006) states that fair value is the price that would be received to sell an asset or would be paid to transfer a liability in an orderly transaction, between market participants at the measurement date. It is mandatory to use quoted prices in active markets for identical assets and liabilities, if they are available. Otherwise, if they do not exist, the preparers of the balance sheet must use quoted prices for similar assets or liabilities in active markets, or in inactive markets with other relevant market data. Finally, if this information is not available, the preparers have to use a mark-to-model approach, that is often the outcome of a mathematical modeling exercise with several assumptions regarding economic, market, or corporate conditions in order to infer the price of the financial instrument if the market existed (FASB 2006).

There is a substantial difference between the American context and the Anglo-Saxon context since, while the accounting systems in the U.K. and the International Standards (IFRS) permit the use of fair value for the revaluation models, the accounting systems in the U.S. do not allow the revaluation model and, therefore, the use of fair value for the valuation of property, plant and equipment. The United States strictly adheres to historical cost (Hermann et al. 2006).

From the literature review it emerges that before the financial crisis researchers especially highlighted the advantages of FVA, whereas after the financial crisis they especially analyzed the disadvantages of the FVA, with some authors arguing that this evaluation model can even be blamed for the recent financial crisis. This could be especially true for those companies, like financial institutions, that have had the possibility of adopting fair value for their balance sheet items.

As a matter of fact, before the financial crisis, some studies found that fair value has more explanatory power than historical cost (Barth 1994; Barth et al. 2001). Hermann et al. argued that fair value can be used for the valuation of property, plant and equipment, since in this way the decision makers can base their analysis on more relevant data. Moreover, Hermann et al. argued that fair value measurements may improve predictive the value, timeliness, comparability and consistency of FA information (Hermann et al. 2006). In a similar vein, Whittington identified the following main features and consequences of fair value: (1) usefulness for economic decisions; (2) more attention focused on current and prospective investors and creditors; (3) more interest in forecasted future cash flow; (4) the relevance and reliability of FA information; and (5) the need for the accounting information to reflect the future (Whittington 2008). Therefore, the proponents of fair value argued that this value is superior to historical cost; some advantages of fair value are: (1) investors prefer to base their analysis and decisions on the value derived from FVA; (2) fair value provides up-to-date information about the value of assets; (3) fair value reflects the true economic substance; (4) fair value is a market value and is not affect by specific factors of firms; and (5) fair value may be the solution to income measurement problems (Penman 2007).

Despite these considerations, other researchers began to point out the disadvantages of the FVA, even before the recent economic crisis starting in 2008. Watts et al. stated that FVA worsens the verifiability and the reliability of financial reporting, especially for non-financial assets (Watts 2003). They stated that fair value evaluations using level 2 and 3 inputs could increase manipulation actions by managers (see also Benston 2008). In a similar vein, Henderson and Cudahy highlighted that several firms involved in financial scandals, like Enron, used variants of FVA (Henderson and Cudahy 2005).

During a financial crisis there are substantial doubts and concerns about fair value evaluation; the main concern regards the suspicion that the FVA could facilitate managers' manipulation. In fact, managers could evaluate financial instruments using market prices in order to avoid losses and impairments. Furthermore, it is possible that prices based on FVA are distorted by market inefficiencies or liquidity problems. In this regard, some studies have stressed the possibility that the FVA could be one of the main reasons for the decline in asset values and for earnings instability. As a matter of fact, the pro-cyclical nature of fair value evaluations seems to create asset bubbles, defined as "*funny assets*" by some authors (Wallison 2008; Pozen 2009).

In a similar vein, other researchers have discussed "*funny revenues and expenses*", since, through fair value evaluation, earnings are not predictive of the future. This may happen because the exit value, typical of fair value, is not able to meet the informativeness and stewardships aims. Another problem may be the fair value evaluation in the level 3 measure (FASB 157), since this is characterized by a lack of reliability and may be subject to bias and abuse (Magnan 2009).

In this framework and according to some scholars, the shift from historical cost accounting to fair value cost accounting seems to foster the alignment between FA and MA. This happens because fair value requirements have focused more attention and challenges on the quality of MA tools and information. As a matter of fact, FVA is mainly based on forward-looking information that managers can properly find and produce through MA techniques (Penman 2007; Hemmer and Labro 2008; Weißenberger and Angelkort 2011; Taipaleenmäki and Ikäheimo 2013). For instance, the convergence process of MA and FA is facilitated by the evaluation of the impairment test. As a matter of fact, the preparers of financial reporting should require the future estimates of cash flow and the fair values for goodwill impairment; such values are produced by controllers. Hemmer and Labro have argued that, in this case, the quality of forward-looking MA information can affect the quality of FA information (Hemmer and Labro 2008).

Fair value-based principles thus required the use of internal information for external reporting purposes, thereby facilitating the alignment of FA to MA.

4.4 The Role of Information Technology on the Convergence Between Financial Accounting and Management Accounting

The most advanced integrated IT solution is represented by Enterprise Resource Planning (ERP)[11] (Granlund and Malmi 2002). IT, and in particular ERPs, are able to collect and integrate data using a common database, and thus they represent a good basis for the overall accounting process (Chapman and Kihn 2009).

For their potential benefits, ERPs became popular during the 1990s in firms all over the world (Arnold 2006; Sutton 2006). Before that date, companies usually

[11] ERP could be defined as: "*enterprise wide packages that tightly integrate business functions into a single system with a shared database*" (Lee and Lee 2000; Quattrone and Hopper 2001; Newell et al. 2003; Grabski et al. 2011). In a similar vein, Kumar and Hillegersberg defined ERP as: "*information systems packages that integrate information and information-based processes within and across functional areas in an organization.*" Both the aforementioned definitions of ERP underline the relevance of integrated information across different functional areas of an organization (Kumar and van Hillegersberg 2000: 22).

used different information systems for each functional area within the organization, which did not allow an easy and timely exchange of information among different functional managers. Furthermore, this fact also discouraged the comparability of accounting information (Rom and Rohde 2007). To solve these problems and to exploit the potentialities of the new Information System Integration (ISI), ERPs were introduced especially to facilitate the exchange of information among managers and, in general, foster internal relationships (Davenport 1998). Therefore, their use is generally justified by the need to share consistent information across different functional areas of a company (Robey et al. 2002).

The literature about potential benefits of an ERP have focused on the effects that ERP adoption could produce on both financial[12] and non-financial performance indicators,[13] so that some authors have even referred to tangible and intangible benefits (Markus et al. 2000; Nicolaou 2004; Fang and Lin 2006; Florescu 2007; Skibniewski and Ghosh 2009; Trucco and Corsi 2014). In particular, Gattiker and Goodhue found that ERP adoption is able to produce the following benefits: (1) better information quality; (2) more efficient internal business processes; and (3) better coordination among different organizational units of a company (Gattiker and Goodhue 2005). Despite such considerations, which have highlighted the potential advantages produced by ERP implementation, Davenport and other scholars have revealed the disadvantages, risks and costs related to ERP adoption. Furthermore, some authors have stressed the potential risks that accounting integration due to ERP adoption could bring to the company. As a matter of fact, even if the ERP system is perceived as a strategic investment within the firm (Cooke and Peterson 1998), the most relevant risk related to this strategic investment is, indeed, the failure of the ERP implementation, which could even lead to firms' bankruptcy (Davenport 1998; Markus et al. 2000).

Costs are both monetary and relative to the human resources required to implement and manage the ERP system and its integration within an organization (Granlund and Malmi 2002). Some authors emphasized that an integrated information system could reduce the flexibility in firms' processes (Davenport 1998; Dillard and Yuthas 2006; Rikhardsson and Kræmmergaard 2006).

[12] The main studies which focused on the effects that ERP adoption could produce on financial performance were carried out by Poston and Grabski (2001), Hunton et al. (2002), Hitt and Wu (2002) and Nicolaou (2004). The aforementioned authors found that the introduction of an ERP is able to produce important effects on the following financial performance indicators: (1) Return On Assets (ROA); (2) Return On Investment (ROI); (3) Return On Sales (ROS); (4) Cost of Goods Sold over Sales (CGSS); and (5) Employee to Sales (ES). Although they found controversial results, even if they used a similar method to carry out their studies, they all agreed that ERP adoption is able to produce all its effects after a certain time-lag (Poston and Grabski 2001; Hunton et al. 2003; Nicolaou 2004; Nicolaou and Bhattacharya 2006).

[13] Fang et al. explored the effects of ERP introduction on non-financial measures by exploiting the balanced scorecard; Qutaishat et al. underlined that ERP adoption could produce benefits in terms of customer satisfaction and employee productivity (Qutaishat et al. 2012); Trucco and Corsi found that ERP adoption is able to produce benefits on classical financial indicators, on corporate governance and on social and organizational aspects (Trucco and Corsi 2014).

However, researchers agree that a holistic view of the effects of ERP implementation is necessary (Jarrar et al. 2000; Markus et al. 2000; Gattiker and Goodhue 2005), since the long and deep process of ERP adoption affects the whole organization (Rose and Kræmmergaard 2006).

In such a framework, a stream of literature about IT has investigated the complex relationships between ERP and FA (Davenport 1998; Poston and Grabski 2001; Hitt and Wu 2002; Marchi 2003; Mauldin and Richtermeyer 2004; Brazel and Dang 2008; Grabski et al. 2011). Some authors have especially highlighted the effects that ERP systems could produce on the final users, uncovering the positive and general impacts that ERP adoption may have on the reliability, timeliness, comparability and relevance of accounting information for external and internal users.

Moreover, prior studies have investigated the market reaction to ERP implementation announcements, finding that stakeholders perceive potential advantages of a new ERP system (Wah 2000; Hayes et al. 2001; Hunton et al. 2002). In particular, Hunton et al. found that analysts reacted positively to ERP announcements, results that varied depending on the firm's size and health. In fact, they found that analysts who participated in the experimental study perceived that a firm may have some benefits due to the use of an integrated IT system (Hunton et al. 2002).

Despite these considerations about the potential positive effects of ERPs on FA, Brazel and Dang found decreased measurements for the reliability of financial statements for external users in the years after the ERP system had been adopted, based on the value of discretionary accruals. According to their framework, this could happen because of a potential increase in the discretion managers have in the use of accounting information (Brazel and Dang 2008). In fact, ERPs allow managers greater access and control of financial information (Dillon 1999).

Furthermore, a quite recent stream of literature about IT has investigated the complex relationships between ERP and management control systems (Maccarone 2000; Quattrone and Hopper 2001; Granlund and Malmi 2002; Shang and Seddon 2002; Hartmann and Vaassen 2003; Marchi 2003; Caglio 2003; Chapman 2005; Dechow and Mouritsen 2005; Dechow et al. 2006; Chapman and Kihn 2009; Granlund 2011; Kallunki et al. 2011).

In particular, Marchi identified the features that accounting information should have. The author especially focused on the internal and managerial perspective, pointing out the necessity to properly balance the reliability and timeliness of information depending on the final users (Marchi 2003). Shang and Sheddon emphasized that managerial benefits following ERP implementation may arise from the better planning and management of resources (Shang and Seddon 2002), whereas Maccarone identified two main classes of benefits produced by adopting ERP: (1) a reduction in the time needed to perform managerial activities, and (2) an improvement in the quality of data and control activities in general (Maccarone 2000). Sangster et al. have recently carried out a survey using a questionnaire addressed to 700 management accountants in large U.K. firms, in order to identify the perceived success of ERP implementation in relation to the role of the respondents, finding that ERP generally improves the quality of the role of management accountants if ERP adoption is successful[14] (Sangster et al. 2009).

Even if most scholars have emphasized the positive, even small, correlation between the use and implementation of an ERP within an organizations and managerial controls (see also: Quattrone and Hopper 2001; Spathis and Constantinides 2004; Kallunki et al. 2011[15]), others have found a quite limited impact on the improvements in management control systems and practices due to ERP adoption. Booth et al. examined the CFOs' perception of the impact of ERPs on the adoption of new accounting practices, finding little evidence to support this. Specifically, they found that ERPs seem to open the way to data manipulation rather than lead to an easier collection and elaboration of management data (Booth et al. 2000).

According to other authors, limited impacts may be linked to resistance to change on the part of controllers and the huge time lag between ERP adoption and the relative effects on management control systems, on organization structure, relationships and roles (Granlund and Malmi 2002; Scapens and Jazayeri 2003).[16] Specifically, Granlund and Malmi found that ERPs bring about an increased centralization of control and a homogenization of relative practices. Even if they found that ERP seems not to produce its strong effects on managerial control and in reporting practices (in terms of content, form and scheduling), they concluded that the processes of ERP implementation are quite long and some effects could arise over time (Granlund and Malmi 2002).

In the ERP environment, management accountant seems to become a business consultant (Booth et al. 2000; Caglio 2003; Rom and Rohde 2007). ERP could be seen as a limitation on the discretion of managers in changing managerial controls in the future, since it is difficult to forecast the long-term implications of ERP during its initial phase of implementation. To overcome this limitation a possible, but not sufficient, solution could be to adopt a strategic and long-term vision during the ERP implementation phase (Grabski et al. 2001, 2011; Quattrone and Hopper 2001).

However, this stream of literature emphasized that management control in the ERP context is a collective affair,[17] useful in creating the notion of global management (Dechow and Mouritsen 2005).

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[14] Their research model and their empirical findings are consistent with findings produced by Grabski et al. (2009).

[15] Kallunki et al. have investigated the role of management accounting control systems as mediating variables of ERP in increasing the positive performance of firms. They found that the more extensive use of financial and operational ERPs is positively correlated with formal and informal controls. Therefore, they demonstrated that ERPs are antecedents to formal and informal controls (Kallunki et al. 2011).

[16] As for financial effects due to ERP adoption, a certain time lag should be taken into account for MA effects as well (Quattrone and Hopper 2001; Granlund and Malmi 2002).

[17] As a matter of fact, ERP is not just a property of the accounting function (Dechow and Mouritsen 2005).

Moreover, another stream of literature has pointed out initial evidence on the important role that ERP can have in fostering the relationship between external financial information and internal managerial information (Innes and Mitchell 1990; Caglio 2003; Taipaleenmäki and Ikäheimo 2013). Some authors have argued that IT may represent a facilitator, motivator, even an enabler for the convergence between FA and MA, and for accounting and management change in general (Innes and Mitchell 1990; Cobb et al. 1995; Booth et al. 2000; Lukka 2007). Booth et al. (2000) asserted that IT is able to set the premises for high levels of information integration.

Taipaleenmäki and Ikäheimo stated that IT could be a useful basis for changes in the accounting system, sometimes even leading to changes and relative integration. As a matter of fact, they asserted that integration could be linked to the contemporary need to understand IT and to decrease in accounting resources (their perspective on the levels of information analysis is summarized in Fig. 4.2) (Ikäheimo and Taipaleenmäki 2010; Taipaleenmäki and Ikäheimo 2013).

Figure 4.3 summarizes the drivers that may foster the convergence between FA and MA; therefore, they could be seen as antecedents of the aforementioned convergence.

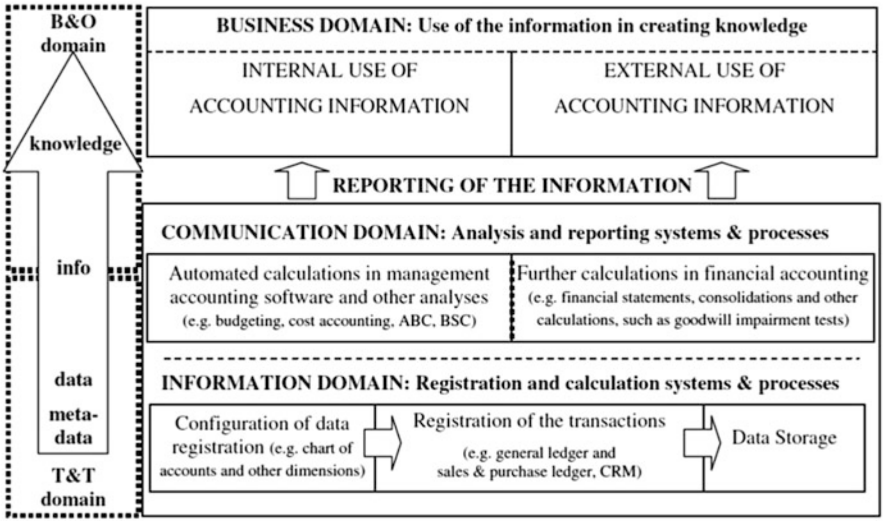

Fig. 4.2 From the registration of accounting data to the reporting of information, and the use of knowledge with accounting information systems (*Source*: Taipaleenmäki and Ikäheimo 2013: 328)

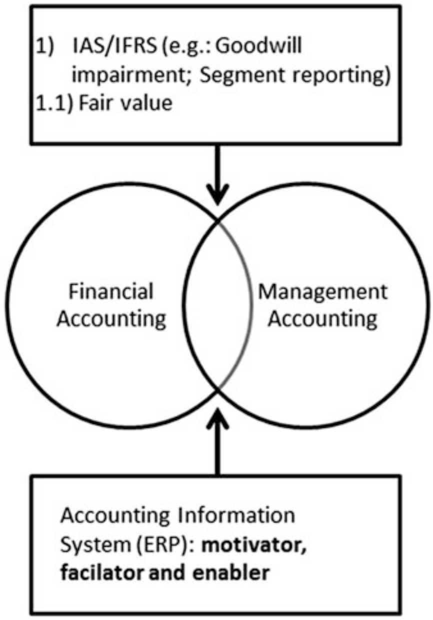

Fig. 4.3 Drivers that foster the convergence between financial accounting and management accounting (*Source*: author's presentation)

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Chapter 5
Financial Accounting and Alignment to Management Accounting in the Italian Context

5.1 Introduction

The previous chapters have discussed development paths of financial accounting (FA) and theoretical premises for the alignment between FA and management accounting (MA). After a literature review about this topic,[1] it is possible to put forward the following research question (RQ) to bridge some gaps in the literature. RQ: *What is the Italian managers' perception of the alignment between financial and management accounting?*

As a matter of fact, although some recent studies have theorized the convergence of these two fields of study, few scholars have investigated the managers' perception of the relationship between FA and MA. Moreover, this gap is particularly evident in the Italian context. To answer the research question and to test the research hypotheses, pilot interviews and an online survey were carried out. Pilot interviews were manually analysed, whereas, data derived from survey was analysed through the Partial Least Squares-Structural Equation Modeling (PLS-SEM). Specifically the PLS-SEM was performed for the whole dataset of answers by the 107 managers. To provide more perspective on the results, the whole dataset of respondents was divided on the basis of the respondents' role; the same path analysis was also performed for the other two datasets (33 of the respondents were financial accountants and 74 of the respondents were controllers).

This chapter is organized as follows. The second section presents the development of the research hypotheses as well as the definition of the research design. The third section presents the sample selection and data collection. The fourth section describes the variables measurement. The fifth section presents preliminary results derived from pilot interviews. Finally, the sixth section relates to survey analysis and presents descriptive statistics, the statistical model, the reliability and validity of data, and, lastly, empirical findings derived from the survey.

[1] See Chaps. 1 and 2.

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5.2 Research Hypotheses and Research Design

This section identifies the research hypotheses and defines the research design. The research hypotheses are focused on three aspects: the analysis of the consequences of an integrated ERP, the analysis of the consequences of IAS/IFRS adoption, and the integration of accounting systems.

5.2.1 ERP and the Convergence of Financial Accounting and Management Accounting

A literature stream about IT has investigated the relationships between Enterprise Resource Planning (ERP) and the FA (Davenport 1998; Poston and Grabski 2001; Hitt and Wu 2002; Marchi 2003; Mauldin and Richtermeyer 2004).[2] Scholars have especially highlighted the effects that ERP systems could produce on the final users, uncovering the positive and general impacts that the ERP adoption may have on the reliability, timeliness, comparability and relevance of accounting information for external and internal users.

Moreover, prior studies have investigated the market reaction to ERP implementation announcements, finding that stakeholders perceive potential advantages of a new ERP system (Wah 2000; Hayes et al. 2001; Hunton et al. 2002) In particular, Hunton et al. found that analysts reacted positively to ERP announcements, results that varied depending on the firm's size and health.[3] Indeed, they found that analysts, who participated in the experimental study, perceived that a firm may have some benefits due to the use of an integrated Information Technology (IT) system (Hunton et al. 2002). Despite these considerations about the potential positive effects of ERPs on FA, Brazel and Dang found a decreased measures in the reliability of financial statements for external users in the years after the ERP system had been adopted, measured through the value of discretionary accruals. According to their framework, this could happen because of a potential increase of discretion that managers have in the use of accounting information (Brazel and Dang 2008). In fact, ERPs allow managers to greater access and control of financial information (Dillon 1999).

Even if most scholars agree that an integrated ERP produces its effects on financial statement disclosure and has advantages regarding accounting information, most of the literature focuses on the external perceptions (analysts and external users at large). Even Hunton et al. have pointed out that one of the main limitations of their study concerns the external validity, as they based their results on laboratory

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[2] For further details about ERP see Chap. 4.

[3] Their results are consistent to findings produced by Hayes et al. (2001), who found abnormal returns after the ERP announcement (Hayes et al. 2001).

experiments. Therefore, they call for more research regarding the potential quality improvements correlated to ERP adoption (Hunton et al. 2002).

Therefore, the literature about the quality of financial reporting is quite vast and controversial, and most scholars have used an external perspective to measure it. A literature review reveals two main streams: the former focuses on the development of external proxies for the quality of financial reporting, whereas the latter focuses on the external perception of financial disclosure quality. However, nowadays there is no universally accepted measure of the quality of financial reporting.

With regard to the first literature stream, over the past decades academics have used the following proxies for financial reporting quality, which are directly found in corporate disclosure: (1) discretionary abnormal accruals (Kothari et al. 2005; Ebrahim 2007); (2) low cost of debt financing (Anderson et al. 2004); (3) revenue-based measure (McNichols and Stubben 2008; Stubben 2009); (4) the presence of going concern reports (Carcello and Neal 2000); (5) SEC issuance of Accounting and Auditing Enforcements Releases (AAERs) (Abbott et al. 2000) and, finally, (6) more complex models based on a mix of the previous proxies (Dechow and Dichev 2002; McNichols 2002; Francis et al. 2005; Biddle et al. 2009; Chen et al. 2011).

With regard to the second literature stream, Felo et al., instead, used the analysts' perception [reported in the 1992–1993 and 1995–1996 Association for Investment Management and Research (AIMR) Review of Corporate Reporting Practices (AIMR 1994, 1997)] to evaluate the perceived quality of a firm's overall financial reporting. Although they used perceptions as a proxy for financial disclosure quality, the analysis maintained the external perspective, as in the first literature stream mentioned above (Felo et al. 2003).

In contrast to the aforementioned literature streams, the present book focuses on management satisfaction regarding the overall quality of FA information. Thus, the present study is based on an internal perspective for measuring the proxy for FA information quality.

Finally, limited empirical studies have been carried out with regard to the relationship between the existence of an integrated ERP and the quality of the FA perceived by internal managers.

From these assumptions, the following hypothesis is put forward:

Hp1a: The use of an integrated ERP positively affects the level of perceived quality in FA.

Even if most of the literature concerns the relationships between IT and financial firm's performance (Nicolaou et al. 2003; Hunton et al. 2003), a quite recent stream of literature about IT has investigated the complex relationships between ERP and management control system (Maccarone 2000; Booth et al. 2000; Granlund and Malmi 2002; Shang and Seddon 2002; Hartmann and Vaassen 2003; Caglio 2003; Scapens and Jazayeri 2003; Dechow and Mouritsen 2005; Sangster et al. 2009; Chapman and Kihn 2009; Granlund 2011; Kallunki et al. 2011). As a matter of fact, most part of the above mentioned literature agrees that ERPs are able to produce their effects on the organization as a whole. In particular, Shang and Sheddon have emphasized that managerial benefits may arise from better planning and management of resources (Shang and Seddon 2002), whereas Maccarone has identified two main class of benefits produced by adopting ERP: (1) a reduction in the time needed to perform managerial activities, and (2) an improvement in the quality of data and control activities at large (Maccarone 2000). Sangster et al. have recently carried out a survey using a questionnaire addressed to 700 management accountants in large UK firms, in order to identify the perceived success of ERP implementation upon the role of respondents, finding that ERP generally improves the quality of the role of management accountants if ERP adoption is successful (Sangster et al. 2009).

Even if most scholars have emphasized the positive, even small, correlation between the use and implementation of an ERP within an organizations and managerial controls (Quattrone and Hopper 2001; Spathis and Constantinides 2004; Kallunki et al. 2011), other have found quite limited impact on the improvements in management control systems and practices due to ERP adoption. Booth et al. examined the CFOs' perception about the impact of ERPs on the adoption of new accounting practices, finding little evidence to support this. Specifically, they found that ERPs seem to open the way to data manipulation rather than lead to an easier collection and elaboration of management data (Booth et al. 2000).

According to other scholars, limited impacts may be linked to resistance to change on the part of controllers and the huge time lag between ERP adoption and the relative effects on management control systems (Granlund and Malmi 2002; Scapens and Jazayeri 2003).

Due to controversial findings and to a still open debate about this topic (Rom and Rohde 2007), it is possible to argue that there is still limited knowledge about the real effects of ERP systems on the quality of MA in terms of reporting systems and internal information practices (Quattrone and Hopper 2001).

Therefore the present book contributes to enriching the literature on this topic, using an internal perspective carried out through a survey addressed to top managers in order to understand the respondents' perception about this relevant issue for their business life.

From these assumptions, the following hypothesis is put forward:

Hp1b: The use of an integrated ERP positively affects the level of perceived quality in MA.

Within this framework, another relevant literature stream has theorized the convergence of MA and FA, based on Information Technology (IT) (Innes and Mitchell 1990; Caglio 2003; Taipaleenmäki and Ikäheimo 2013). Scholars have argued that IT may represent a facilitator, motivator, even, an enabler for the aforementioned convergence and in general for the accounting and management change (Innes and Mitchell 1990; Cobb et al. 1995; Booth et al. 2000; Lukka 2007). Booth et al. asserted that IT is able to set the premises for high levels of information integration (Booth et al. 2000).

In a similar vein, Caglio has theorized deep changes in the accounting practices due to the introduction of an ERP system, and in this regard, he has introduced a new hybrid figure of manager that is somewhere between a financial accountant and the other professional managers, confirming, through a case study, the pivotal role of ERP in cutting down the barriers between FA and MA (Caglio 2003).

Moreover in recent years Taipaleenmäki and Ikäheimo has stated that IT could be a useful basis for changes in the accounting system, sometimes even leading to changes and relative integration. As a matter of fact, they asserted that the integration could be linked to the contemporary needs to understand IT and to a decrease in the accounting resources (Ikäheimo and Taipaleenmäki 2010; Taipaleenmäki and Ikäheimo 2013). Even if the scarce literature seems to agree that the adoption of an integrated ERP affects the level of integration of accounting information systems, empirical evidence about this topic and the direction of this relationship have not yet been produced.

From these assumptions, the following hypothesis is put forward:

Hp1c: The use of an integrated ERP positively affects the level of integration of accounting systems.

5.2.2 IAS/IFRS and the Convergence of Financial Accounting and Management Accounting

As shown in Chap. 2, the application of IAS/IFRS is not without effects on the quality of financial reporting, especially in terms of reliability of information. In this sense, it is interesting to highlight that the effects produced by IAS/IFRS are correlated to fair value (Barth et al. 2012; Whittington 2014; Demerjian et al. 2014). In particular, Watts (2003) stated that the application of Fair Value Accounting (FVA) due to the application of IAS/IFRS may worsen the verifiability and the reliability of the financial reporting, especially for non-financial assets (Watts 2003). In point of fact, he stated that the fair value evaluations using level 2 and 3 inputs could even increase manipulation actions by managers (in this regard, see also Benston 2008).

However, the effects of fair value and of IAS/IFRS on FA in general are not so clear, since other scholars have achieved different results. For example, Barth et al. (2012) have argued that the discretion in earnings management is reduced through FVA, even though the volatility of some accounting items may be increased.[4] Despite these considerations, an important literature stream points out that firms can also voluntarily adopt IAS/IFRS. The reason for this choice is mainly linked to the fact that IAS are considered to be superior to most local GAAP

[4] This research is consistent with a previous study conducted by Barth et al. (2008), who found that the application of IAS produces less earnings management, more timely loss recognition and more value relevance of accounting system respect than firms which do not adopted IAS.

(Ashbaugh and Pincus 2001; Leuz 2003; Ding et al. 2007; Barth et al. 2008). However, this kind of motivation is not the only one behind the voluntary adoption of IAS/IFRS, since the existing literature suggests that a firm is perceived as high value into the future, whether or not its managers voluntarily increase the level of disclosure (Jovanovic 1982; Verrecchia 1983; Moel 1999; Karamanou and Nishiotis 2009).

Based on these considerations, even the voluntary adoption of IAS/IFRS could improve the quality of firms' information disclosure and the overall future value of firms. However, no empirical findings have been produced yet on management satisfaction regarding the potential effects of the use of IAS/IFRS on the overall number of firm disclosures.

From these assumptions, the following hypothesis is put forward:

Hp2a: The use of IAS/IFRS positively affects the level of perceived quality in FA.

Although most of the literature has focused on the relationship between IAS/IFRS adoption and corporate disclosure, few scholars have concentrated on the potential effects that IAS may have on management accounting practices (Colwyn Jones and Dugdale 2001; Ewert and Wagenhofer 2006; Procházka 2011; Cohen and Karatzimas 2013). Ewert and Wagenhofer found that IAS/IFRS are suitable for internal managerial aims (Ewert and Wagenhofer 2006). Along these lines, Jones and Luther investigated whether deep changes to IFRS adoption in Germany may have led to some effects on the traditional management accounting system, wondering if changes in financial reporting due to IFRS may lead to the abandonment of some managerial practices and the adoption of new techniques in internal reporting. They found in the end that managers are faced with a deep challenge, that regards the integration of internal and external reporting systems. Hence, managers could decide to integrate FA and MA or to continue to have dual accounting systems. They based their analysis on interviews with financial accountants and controllers, since they stressed the relevance of understanding the perception of external and (in particular) internal users (managers) with regard to the introduction of IFRS[5] (Jones and Luther 2005).

In a similar vein Procházka found that IFRS are even becoming the leading rules of changes in the MA area (Procházka 2012), whereas Cohen and Karatzimas found limited impacts on managerial practices and techniques after the IFRS adoption. However, they found that if managers can use IFRS financial data for internal purposes, they can even use this kind of external information for managerial

[5] Jones and Luther stated that: *One possibility, is that external and internal accounting systems will become are integrated in changes that will not only create financial accounting systems that differ fundamental from German traditions, but also change their management accounting systems in ways that would mark an equally significant departure from established Controlling practices. In turn this might entail a changed relationship between financial accounting and Controlling departments and, conceivably, enhance the occupational and organization position of financial accountants in relation to Controllers* (Jones and Luther 2005: 28).

accounting aims, consistent with the above mentioned prior literature and with the theory of the recent convergence of FA and MA (Cohen and Karatzimas 2013).

Furthermore, in this framework, some literature has analysed the effects of the adoption of the IAS/IFRS on the quality of the accounting system (Christensen et al. 2015; Paananen and Lin 2009; Liu et al. 2011). Liu et al. found that the mandatory adoption of IAS/IFRS led to better quality in the accounting system. They found that, after the mandatory IAS/IFRS adoption in Australia, earnings management was reduced, the value relevance of financial statement information was improved, and the timely loss recognition was improved as well. Christensen et al. found similar results (Christensen et al. 2015; Liu et al. 2011). Nonetheless, other authors found different results for similar topics, such as Paananen and Lin, who found exactly the opposite results as Liu et al. and Christensen et al., since they demonstrated that the mandatory adoption of IAS/IFRS caused a worsening in the quality of accounting systems (Christensen et al. 2015; Paananen and Lin 2009; Liu et al. 2011).

Despite these considerations, limited studies have examined the relationship between the use of IAS/IFRS and the level of perceived quality in MA, due to the alignment of FA and MA, from an internal perspective.

From these assumptions, and to enrich the present literature about this topic, the following hypothesis is put forward:

Hp2b: The use of IAS/IFRS positively affects the level of perceived quality in MA.

The literature agrees that harmonization of financial reporting standards has represented a huge incentive to the convergence of MA and FA (Marchi et al. 2008; Quagli 2011; Zambon 2011; Taipaleenmäki and Ikäheimo 2013).

As some prior studies have underlined, the convergence of FA and MA is indeed implicit in some IAS/IFRS. In fact, prior literature has stressed that IAS/IFRS have produced relevant changes in both the internal and external flow of information (Jermakowicz 2004).[6]

For instance, IFRS 8 requires that information useful in financial reporting is mainly based on the internal management reports. IFRS 8 thus requires some changes in the MA processes, tools and reporting, since it requires that operating segments[7] should be in line with the internal structure of the firm. Hence, FA and MA information should be aligned and integrated and also exploit the potential

[6] Jermakowicz (2004) stated that: *The IAS Regulation has significant implications not only for financial statement preparers and users, but also for the entire financial reporting institutional infrastructure as well as the level of accounting harmonization across the EU* (Jermakowicz 2004: 67).

[7] IFRS 8 defines operating segments in the following way: *An operating segment is a component of an entity: [IFRS 8.2] that engages in business activities from which it may earn revenues and incur expenses (including revenues and expenses relating to transactions with other components of the same entity), whose operating results are reviewed regularly by the entity's chief operating decision maker, to make decisions about resources to be allocated to the segment and assess its performance and for which discrete financial information is available.*

benefits produced by an integrated IT system (Ikäheimo and Taipaleenmäki 2010). In these circumstances, managers perceive the need to align MA and FA deadlines, especially for information that is forward-looking (Hemmer and Labro 2008).

In a similar vein, FA practices with regard to the identification of CFUs and goodwill allocation became opportunities for MA changes, whereas the structure of CGUs, asset allocation and other typical activities of MA can be viewed as potentialities which may be exploited by financial accountants, even in providing additional disclosure for markets (Quagli 2011).

Furthermore, other international standards may foster the alignment between FA and MA, such as IAS 32 and IFRS 9, which regard the disclosure needed for financial instruments; IAS 12, which regards income taxes; and IAS 40, which regards investment property (Ikäheimo and Taipaleenmäki 2010; Zambon 2011). Specifically, IAS 32 and IFRS 9 support the convergence of FA and MA, especially for forward-looking information required for impairment and hedge accounting; IAS 12 supports the convergence for the necessity to have internal information in order to define a business combination for financial asset valuations; finally IAS 40 supports the convergence for the necessity to have advanced accounting systems to evaluate fair value, mainly based on managerial information.

In this framework, the possible alignment between FA and MA seems to have occurred because fair value requirements require more attention and pose more challenges to the quality of MA, as fair value accounting is mainly based on forward-looking information that managers can properly find and produce thanks to MA techniques (Hemmer and Labro 2008).

Regulators and practitioners have moved in the direction of a change in accounting principles, since they perceived a weakness in the traditional rules and standards that drive the development of financial disclosure (Gazdar 2007; Zambon 2011).

In a similar vein, some scholars have stressed the importance of having more and more financial information based on internal managerial systems in order to reduce the information asymmetry between internal and external users (Beattie et al. 2004; Seyfert et al. 2006). It is possible to conclude that, consistently with other researchers' viewpoints, through IAS/IFRS, MA facilitates changes in FA and, at the same time, FA motivates changes in MA, thereby facilitating the alignment between the two disciplines (Taipaleenmäki and Ikäheimo 2013).

Even if the recent literature agrees that the adoption of IAS/IFRS positively affects the level of integration of accounting information systems, empirical studies on this topic have not been carried out yet.

From these assumptions, and to enrich the present literature, the following hypothesis is put forward:

Hp2c: The use of IAS/IFRS positively affects the level of integration of accounting systems.

5.2.3 Integration of Accounting Systems

Taking advantage of the literature that theorizes a convergence of FA and MA (Ikäheimo and Taipaleenmäki 2010; Quagli 2011; Zambon 2011), it is relevant to point out the attention paid to the role of the integration of accounting systems in terms of management satisfaction with the overall quality of FA information.

In this regard, the integration of accounting systems may foster the perceived quality of financial disclosure, especially due to the close relationship between FA and controlling departments (Jones and Luther 2005). In that way, the two offices are indeed able to have a unique view of business life and activities and may reduce the activities of reconciliation between FA and MA information, thus exploiting the potential benefits from having a unique and integrated accounting system. Hence, FA information may turn out to be more timely, reliable, relevant and more easily shared amongst managers compared to what would occur in firms with separate accounting systems (Marchi 2003).

As shown before, the literature about the quality of financial reporting is quite vast and controversial, and most scholars have used an external perspective to measure it. A literature review reveals two main streams: the former focuses on the development of external proxies for the quality of financial reporting, whereas the latter focuses on the external perception of financial disclosure quality. In contrast to the aforementioned literature streams, the present book focuses on management satisfaction regarding the overall quality of FA information. Thus, the present study is based on an internal perspective for measuring the proxy for FA information quality.

From these assumptions, and to enrich the present literature, the following hypothesis is put forward:

Hp3: The level of integration of accounting systems positively affects the level of perceived quality in FA.

As shown in Chap 3, the literature about the integration of accounting information systems is quite recent and is particularly innovative in Germany and Finland, even if some initial interest has also begun to arise from other geographical contexts, such as Spain and Italy.

Within this framework, some researchers have focused on the relationship between the integration of accounting systems and MA practices and quality. Considerations provided to support this assumption have criticized the previous position of Kaplan, who claimed that integration of accounting systems leads to a decrease in the quality in MA information. Integration could instead choose to exploit potential advantages due to the alignment aims and reporting of FA and MA (Kaplan 1984). Advantages may be linked to the fact that, under integrated accounting systems, managers can obtain managerial information in less time and with a higher degree of reliability (Jones and Luther 2005; Weißenberger and Angelkort 2011). The increase in reliability for managerial information is due to the fact that, through the integrated system, the information for internal purposes is

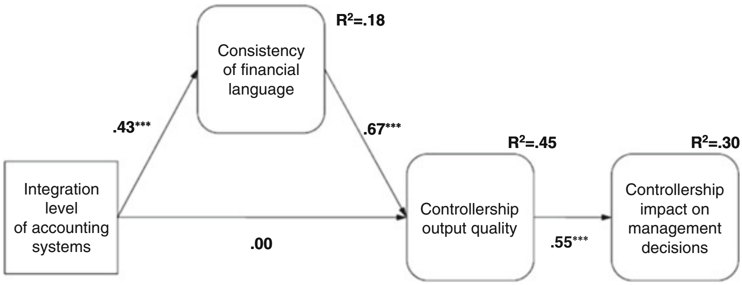

Fig. 5.1 Research model and SEM results on the link between integration of accounting system and controllership output quality in Germany (*Source*: Weißenberger and Angelkort 2011: 172)

easily reconciled to FA data, which is subject to more strict compliance rules and internal and external checks (Wagenhofer 2006).

Based on these considerations, Weißenberger and Angelkort focused their analysis on the effects of the integration of financial and management accounting on controllership effectiveness. To test their research hypotheses, they used a survey of 1,500 German firms (the results are shown in Fig. 5.1). They found that there is no direct effect between the integration of accounting systems and controllership output quality, measured by the managers' perceived quality of the controlling department. Surprisingly, they found an indirect correlation between these two variables, a relationship that is fully mediated by the consistency of financial language, measured by the managers' perceived quality of the FA information produced by the integrated accounting system (Weißenberger and Angelkort 2011).

Nonetheless, no empirical findings have been produced yet in the Italy.

From these assumptions, and to enrich the literature on the link between integration of accounting systems and management satisfaction about MA information, the following hypothesis is put forward:

Hp4: The level of integration of accounting systems positively affects the level of perceived quality in MA.

Referring to the international literature that has recently analyzed the convergence of FA and MA[8] and the relative implications for firms, for managers and even practitioners, it is relevant to analyze the relationship between the perceived quality of MA and the perceived quality of FA.

As Hemmer and Labro (2008) pointed out, the two disciplines are intimately correlated to each other: "*We show that, contrary to the standard textbook proposition, properties of management and financial accounting systems are not independent*" (Hemmer and Labro 2008: 1).

Particularly, in the Italian context, the recent literature on this topic has produced some argumentations and preliminary findings that provide promising evidence on the possible alignment between FA and MA (Cinquini and Tenucci 2011; Quagli

[8] For additional insights into the convergence of FA and MA see Chaps. 3 and 4.

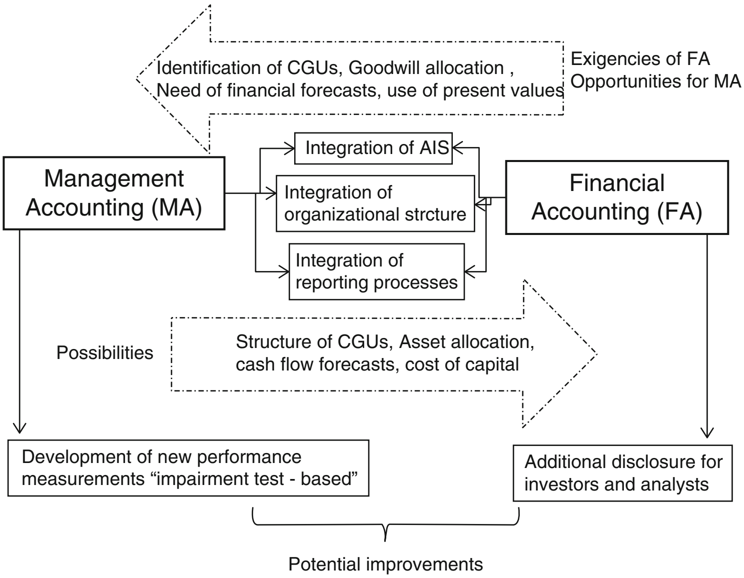

Fig. 5.2 The dynamic relationships between financial and management accounting (*Source*: Quagli 2011: 32)

2011; Zambon 2011). In Italy, however, a deep divergence between FA and MA was rooted in the Italian tradition of Economia Aziendale[9] (Business Administration) (Zambon 2011), in which internal matters (such as cost accounting tools and practices) are kept apart from the FA system, thus creating and maintaining two separate accounting systems (Bergamin Barbato et al. 1996). Despite these considerations, Zappa defined Economia Aziendale through a unitary and systemic vision, since he recognized a unique aim for the three main levels of the analysis of the firm: organization, management and accounting (Zappa 1927: 20).

In a similar vein, Quagli (2011) opens interesting research avenues regarding the possibility of overcoming the traditional barriers between financial and management accounting, by exploiting the goodwill accounting and the impairment test. According to his perspective, FA practices became, in fact, opportunities for MA changes, whereas the typical activities of MA can be viewed as potentialities which may be exploited by financial accountants, even in providing additional disclosure for markets. In this regard, Quagli proposed the following research model to analyze the dynamic relationships between FA and MA (Fig. 5.2).

[9] The term "Economia Aziendale" was coined by Gino Zappa in 1927 during an official speech. 1927. Economia Aziendale was defined in the following way: *The science which focuses on the conditions of existence and the manifestations of the life of firms. Thus it is the science of the business administration* (Zappa 1927: translated from the original).

He concluded with a call for more research to evaluate whether FA rules may bring about changes in MA or whether MA may affect FA. He argued that these issues are relevant for researchers, managers and firms at large.

Furthermore, Cinquini and Tenucci (2011) analyzed the potential of MA in providing financial and non-financial information, within the framework of the management commentary.[10] Hence, they identified day-by-day activities that linked the management accountants with the financial accountants, increasing the overall value performance information perceived by these types of managers.

Nonetheless, no empirical findings with regard to the relationship between the management satisfaction with the overall quality of FA and the management satisfaction with the overall quality of MA have been produced yet in the Italy.

From these assumptions and to shed some light on such relationship, the following hypothesis is put forward:

Hp5: The level of perceived quality in FA positively affects the level of perceived quality in MA.

5.2.4 The Research Design

The research design resulting in the above-mentioned hypotheses is summarized in the Fig. 5.3. As shown in Fig. 5.3, the control variables for the research design regard two aspects. The former is linked to respondents' features, whereas the latter is linked to firms' features. Control variables, which regard respondents' features comprise: (1) Respondents' Role; Respondents' Gender; Respondents' Education and Respondents Age, whereas the second group of control variables comprise: (1) Size; (2) Industry and (3) List.[11]

The measurement of the control variables and the other research variables is better specified in Sect. 5.4.

5.3 Sample Selection and Data Collection

In order to answer the research question and to test the research hypotheses, the present study was conducted on a sample of Italian managers, who working for large and small/medium Italian listed and non-listed companies.

[10] For further analysis on the management commentary see also: Silvi and Bartolini (2011) and Chap. 2.

[11] For a detailed description of the control variables, see Sect. 5.4.3.

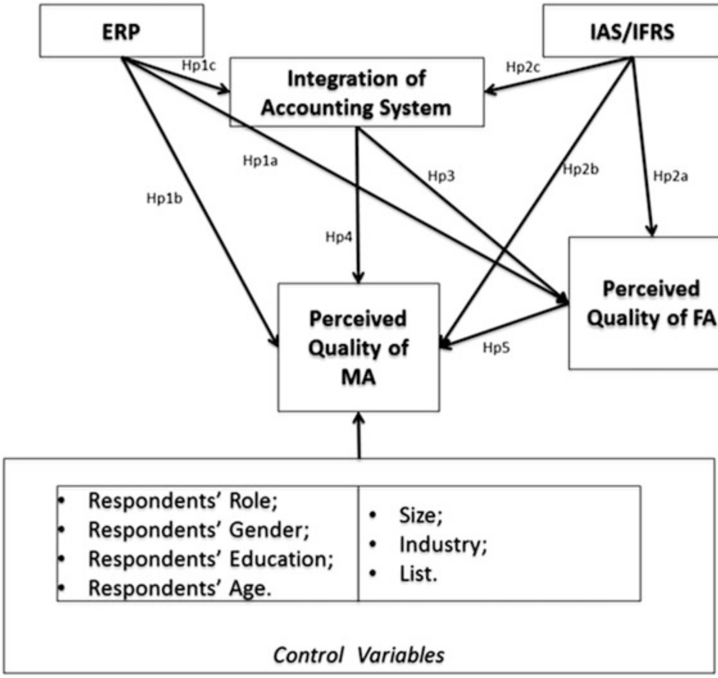

Fig. 5.3 The research design and the research hypotheses (*Source*: author's presentation)

Specifically, participants are classified into the following two main classes according to their job title: Controllers and Financial Accountants. Controllers are management accountants responsible for internal reporting,[12] whereas Financial Accountants[13] are managers responsible for the corporate disclosure essentially useful for external purposes. Within the class of Financial Accountants the following managerial roles are included: Chief Financial Officer (CFO), investor relator (if the firm is listed[14]), Chief Executive Officer (CEO) and the head of annual reports.

The present work is, hence, based on the aforementioned top managers, because they could be considered as the most involved people in the FA information and practices. Furthermore, the controller has a wide acquaintance with the information flow regarding both FA and MA (Caglio 2003; Jones and Luther 2005).

The research was conducted in two main phases. During the first phase, exploratory in-depth pilot interviews were carried out from April to September 2014 and during the second, an Italian survey was sent to top managers in October 2014.

[12] For additional details about the role of controller, see Chap. 3.

[13] For additional details about the role of financial accountants, see Chap. 2.

[14] The survey was addressed to both listed and non-listed firms; for this reason from the FA side, the current research also considers the investor relator.

This combined method of interviews and survey could allow the researcher to understand managers' perspectives, highlighting different viewpoints of Controllers and Financial Accountants about the relationships between FA and MA and about the other issues investigated in the present work. This methodology is particularly useful in evaluating perceptions and interpretations of social actors (Colwyn Jones 1992) and reflect the participants' experience in business activities (Colwyn Jones and Dugdale 2001; Giddens 2013). Furthermore, the joint use of both research methods allows the author to overcome possible weaknesses and limitations of the single research method.

Firstly, six in-depth pilot interviews were carried out in order to elicit early qualitative feedback and to better refine the research design, the research hypotheses and the subsequent survey (Chen et al. 2010). Moreover, qualitative interviews allow researchers to have descriptive answers about the possible explanations and causes for the alignment of FA and MA (Graham et al. 2005). In fact, through the interviews, it was possible to identify the antecedents and consequences of the integration of FA and MA as well as the endogenous and exogenous variables.[15] These preliminary findings helped in building the research design and in discussing results.

The six interviewees were selected from Italian firms on the basis of their willingness to cooperate in university research projects (Kvale and Brinkmann 2009; Yin 2011; Rubin and Rubin 2011), using the LinkedIn social network to contact the managers. In this preliminary step, interviews were carried out exploiting an open semi-structured questionnaire for a total of a maximum of 40 min per person. The interviews, involving three controllers and three financial accountants, were divided into the following three main sections: (1) definition of the respondent's role, his/her responsibility, the type of his/her relationship with other top managers; (2) the information flow about financial reporting and its development paths; and (3) his/her perceived relationship between FA and MA.

The final sample of Italian managers for the second research phase (the survey) was composed of 200 Italian managers from listed and non-listed firms.[16] Participants were randomly selected from the LinkedIn social network database, as some scholars have recently stressed the relevance and widespread use amongst people of this social media applications (Albrecht 2011). Furthermore, the growing relevance of interest in LinkedIn by practitioners has also been documented by the Association of Accounting Marketing (AAM 2011).

The survey questions, like the interviews, were sent to those managers who showed they were particularly willing to collaborate in the current research project. The main aim of the survey was to test the research design, previously determined by the pilot interviews, and to generalize the empirical results in order to enrich the current literature on this topic (Gable 1994). The survey[17] was split into six sections

[15] See Sect. 5.4.

[16] Following the recommendations of Dillman, the questionnaires were first tested on three Italian managers and three academic researchers (Dillman 2008).

[17] The survey was sent through an e-mail, which included a cover letter explaining the research aim and a web-link where participants could anonymously answer the questionnaire.

as follows: (1) personal data of the interviewee; (2) features of the firm; (3) convergence between FA and MA; (4) IAS/IFRS; (5) ERP; and (6) final section and suggestions.

5.4 Variable Measurement

The measurement of all research variables included in the research design is based on the survey questions sent to Italian managers (second phase of the research). The questions were selected based on prior studies and preliminary interviews (first phase of the research).

As the empirical analysis is based on a survey, most of the research variables measure the managers' perception, which could be interpreted as management satisfaction with the survey issues.[18] Personal cognitive processes are deemed to be highly relevant for the life of the firms and for decision-making processes (Mintzberg et al. 1976; Hambrick and Mason 1984). Therefore, the managers' perceptions are the response to stimuli coming from the environment (MacKay 1987). In order to avoid problems of heterogeneity of data, each variable was standardized. The research variables are classified into three categories: (1) exogenous variables (Sect. 5.4.1), (2) endogenous variables (Sect. 5.4.2), and (3) control variables (Sect. 5.4.3).

5.4.1 Exogenous Variables

Exogenous variables are those variables which do not have explicit causes (Garson 2009). In the research model shown in Fig. 5.3, exogenous variables are ERP and IAS/IFRS. The ERP variable indicates the extent to which the IT is perceived to be integrated by managers. The ERP item was measured on a 3-point rating scale (2 if the ERP is perceived totally integrated between FA and MA information[19]; 1 if the ERP is perceived partially integrated; 0 if the ERP is perceived as not integrated).[20] The measurement of the ERP variable follows the scale and the definition of ERP integration provided by Booth et al. (2000: 9).[21]

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[18] The survey questions are reported in the Appendix.

[19] With regard to ERP, the survey question was: "*To which extent is ERP perceived able to manage both information useful for managerial purposes and information useful for external purposes*?"

[20] In this regard, Booth et al. (2000: 5) argued that: *Information systems integration in general and ERP systems more specifically are among the most important topics arising at the interface of information systems and accounting (and other disciplines) in the past 10 years*.

[21] Booth et al. (2000: 9) followed the definition of ERP integration provided by Bhatt (1995) and introduced the term information integration: "*which describes the scope of interchange and use of data and information generated by internal and external sources—i.e., by the various functional areas and software applications in the enterprise*." The author defined ERP integration as "*the*

The IAS/IFRS variable indicates whether the firm adopts and currently uses International Accounting Standards (1 if the firm currently uses IAS/IFRS and 0 if the firm does not use IAS/IFRS).

5.4.2 *Endogenous Variables*

Endogenous variables are those variables with explicit causes; they can be either intervening causal variables or dependent variables. The former kind has both incoming and outgoing causal arrows in the path diagram, whereas the latter has only incoming arrows (Garson 2009). In the research model shown in Fig. 5.3, the endogenous variables are (1) Integration of Accounting System (Sect. 5.4.2.1); (2) Perceived Quality of FA (Sect. 5.4.2.2); and (3) Perceived Quality of MA[22] (Sect. 5.4.2.3).

5.4.2.1 Integration of Accounting System Variable

The measurement of the level of Integration of Accounting System is mainly based on the definition given by Weißenberger and Angelkort. They defined the integration level of the accounting system as follows: "*the extent to which management accounting systems used by controllers are technically integrated with the financial accounting systems*" (Weißenberger and Angelkort 2011: 167). They identified, for the first time in the literature, a scale able to measure the level of integration of accounting systems. According to their research model, the present book considers the Integration of Accounting System as a formative variable, hence formed by a set of indicators.[23]

The Integration of Accounting System is therefore conceptualized using five indicators[24] which together are able to describe the convergence of FA and MA in terms of accounting systems.

The five items encompassed in Integration of Accounting System are the following: (1) Consistency between short-term planning and financial GAAP; (2) Consistency between medium and long-term planning and financial GAAP; (3) Consistency between deadlines for management reporting and financial reporting; (4) Consistency between information produced for internal purposes

extent various information systems are formally linked for the sharing of consistent information within an enterprise. Enterprise information systems integration is conceptualized along two dimensions: (1) data integration, and (2) enterprise communication networking" (Bhatt 1995).

[22] The Integration of Accounting System and the Perceived Quality of FA are intervening causal variables, whereas the Perceived Quality of MA is the dependent variable.

[23] For further details about the difference between reflective and formative variables see also: Diamantopoulos (2006, 2008) and Coltman et al. (2008).

[24] All five items describing the Information Accounting System are equally weighted.

and information required for external purposes; and (5) Consistency between internal measures for operating income and the operating income published in the financial statements.[25]

With regard to the Consistency between short-term planning and financial GAAP, the question in the survey was: *To which extent is short-term planning and budgeting based on valuation methods in accordance with financial GAAP (0 very low,. . ., 7 very high)*. With regard to Consistency between medium and long-term planning and financial GAAP, the survey question was: *To which extent is medium and long-term planning and budgeting based on valuation methods in accordance with financial GAAP (0 very low,. . ., 7 very high)*.

With regard to Consistency between deadlines for management reporting and financial reporting, the survey question was: *To which extent are deadlines for management reporting and financial reporting harmonized? (0 very low,. . ., 7 very high)*. With regard to Consistency between information produced for internal purposes and information required for external purposes, the survey question was: *To which extent is the information produced for internal purposes in accordance with information required for external purposes? (0 very low,. . ., 7 very high)*.

With regard to Consistency between internal measures for operating income and the operating income published in the financial statements, the survey question was: *To which extent is the internal measure for operating income in accordance with the operating income published in the financial statements? (0 very low,. . ., 7 very high)*.

Descriptive statistics of Integration of Accounting System and the items used to construct this variable are reported in Tables 5.1 and 5.7.

5.4.2.2 Perceived Quality of Financial Accounting Variable

The measurement of the Perceived Quality of FA is in part based on the definition given by Weißenberger and Angelkort for the consistency of financial language which "*reflects the extent to which information provided by financial and management accounting is perceived as coherent and consistent by management*." (Weißenberger and Angelkort 2011: 168). As opposed to the above-mentioned scholars, who used three reflective indicators to measure the consistency of financial language, the present work measures the Perceived Quality of FA through the managers' perception about the level of the overall quality in FA information due to a high level of integration between FA and MA.

With regard to this variable, the survey question was: *To which extent do you perceive an improvement in the quality of FA due to a high level of integration between FA and MA? (0 very low,. . ., 7 very high)*.

Descriptive statistics of Perceived Quality of FA are reported in Table 5.1.

[25] The survey questions are derived from the survey carried out by Weißenberger and Angelkort (2011).

Table 5.1 Descriptive statistics for the research variables for the whole dataset (N = 107)

Variable	Mean	Min	Max	Std. Dev.
ERP	1.08	0	2	0.702
IAS/IFRS	0.45	0	1	0.500
Integration of accounting system	4.46	1.6	7	1.226
Perceived quality of FA	4.67	1	7	1.571
Perceived quality of MA	4.43	1	7	1.603

5.4.2.3 Perceived Quality of Management Accounting Variable

The measurement of the Perceived Quality of MA is determined starting from the definition given by Weißenberger and Angelkort with regard to controllership output quality, which "*measures the quality of the controlling department's outputs in terms of, e.g., scope, timeliness or accuracy as perceived by management*" (Weißenberger and Angelkort 2011: 168). In contrast to the above-mentioned authors, who used six reflective indicators to measure controllership output quality, the present work measures the Perceived Quality of MA through the managers' perception about the level of the overall quality in MA information due to a high level of integration between FA and MA.

With regard to this variable, the survey question was: *To which extent do you perceive an improvement in the quality of MA due to a high level of integration between FA and MA? (0 very low,. . ., 7 very high).*

Descriptive statistics of Perceived Quality of MA are reported in Table 5.1.

5.4.3 Control Variables

Control variables for the research design regard either respondents' features or firms' features. The former control variables are: (1) Respondents' Role,[26] Respondents' Gender,[27] Respondents' Education,[28] and Respondents Age,[29] whereas the second group of control variables are: (1) Size,[30] (2) Industry,[31] and (3) List.[32]

[26] 1 if the respondent is a controller and 0 if the respondent is a financial accountant.

[27] 1 if the respondent is a male and 0 if the respondent is a female.

[28] 1 if the respondent has a Ph.D. or a Master's, 2 if the respondent has a bachelor's degree and 3 if the respondent has just a diploma.

[29] 1 if the respondent is less than 35 years old, 2 if the respondent is between 35 and 50 years old and 3 if the respondent is more than 50 years old.

[30] 1 if the firm is a big firm (more than 250 employees), 2 if the firm is medium-size (between 15 and 250 employees) and 3 if the firm is small (less than 15 employees).

[31] 1 if the firm belongs to the industrial sector, 2 if the firm belongs to the service sector, and 3 if the firm belongs to another sector (with the exclusion of the financial and banking sectors, given their peculiarities that make them non-comparable firms with respect to the other sectors).

[32] 1 if the firm is a listed firm and 0 if the firm is a non-listed firm.

5.5 Pilot Interviews: Preliminary Analysis

Preliminary results from six in-depth pilot interviews allowed for some interesting considerations on the top managers' perception about the development paths of FA and its progressive alignment to MA in the Italian context. These results are significantly useful for a preliminary test of the research hypotheses and the research design.

Results from pilot interviews are classified into two main categories depending on the participants' role: (1) financial accountants' interviews (Sect. 5.5.1) and (2) controllers' interviews (Sect. 5.5.2).

5.5.1 Financial Accountant Interviews

In particular, the interviews involving the financial accountants brought out some relevant considerations on the recent development paths that are involved in the overall FA flow of information (Sect. 5.5.1.1), the consequent changing role of the financial accountants (Sect. 5.5.1.2), and their perceptions on the convergence process between FA and MA (Sect. 5.5.1.3).

5.5.1.1 Financial Accountant Interviews: The Development Path of Financial Accounting

With respect to the development paths of FA, the interviews were consistent with the prior literature on this topic[33] and are thus useful in strengthening the overall research design.

Relevant changes in the content of FA could be summarized as follows[34]:

- an increased attention that financial accountants need to give to risks and risk management. This also allows managers to identify new types of risks, such as strategic risks, market risks, financial risks and legal risks which could potentially decrease the performance value of the firm;
- an extension of the management and discussion analysis, especially in the part in which the future orientation and managerial implications are described;
- a reduction in the discretion that managers use in the production of the mandatory disclosure;
- an increase in the press releases and presentations regarding future and strategic information about the firm.

[33] For additional insights on the development path of FA, see Chap. 1.

[34] Changes in FA content are summarized in Fig. 5.4.

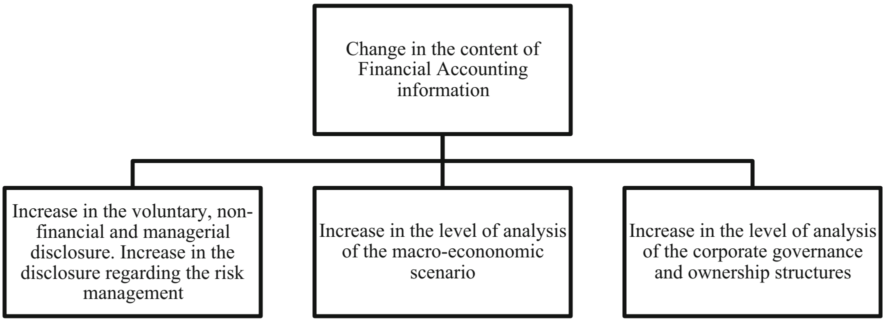

Fig. 5.4 Development paths of FA information in the Italian context: preliminary considerations from pilot interviews (*Source*: author's presentation)

5.5.1.2 Financial Accountant Interviews: The Changing Role of the Financial Accountant

Preliminary findings from the interviews brought out that the role of the financial accountant is gradually changing. In particular, the traditional role, mainly focused on the financial accountant's responsibility regarding FA, has shifted to a new one, in which the relationships with other top managers and the firm's offices are becoming more and more pivotal (see Fig. 5.5).

In the traditional function, the financial accountant is thus mainly responsible for producing and properly disclosing corporate information to external stakeholders in order to meet their requirements and their specific needs. On the other hand, the new role of the financial accountant is enriched with new activities, linked to the need to have more relationships with the other business functions. Participants in pilot interviews argued that the other business functions related to the financial accountant are: MA office; the commercial office; the strategic planning office and the press office.

With regard to the close relationship between FA and the controller, the financial accountants stated that they needed updated and timely information from the controller, in order to understand the origin of the accounting data. As a matter of fact, the financial accountant asks the controller for the information that he/she needs on the basis of the disclosure requirements. In doing so, he/she participates in and even initiates meetings with the management accountants. Respondents argued that they usually participate in several meetings concerning MA matters such as: (1) preparation of the budget, (2) performance analysis of production lines, and (3) performance analysis divided up into geographical areas.

> One of my main aims is to stimulate the controller and MA in general to produce timely information, in order to answer new questions and deal with new market dynamics, thereby attempting to anticipate the other competitors and to satisfy all stakeholders. (Financial accountant, large Italian firm)

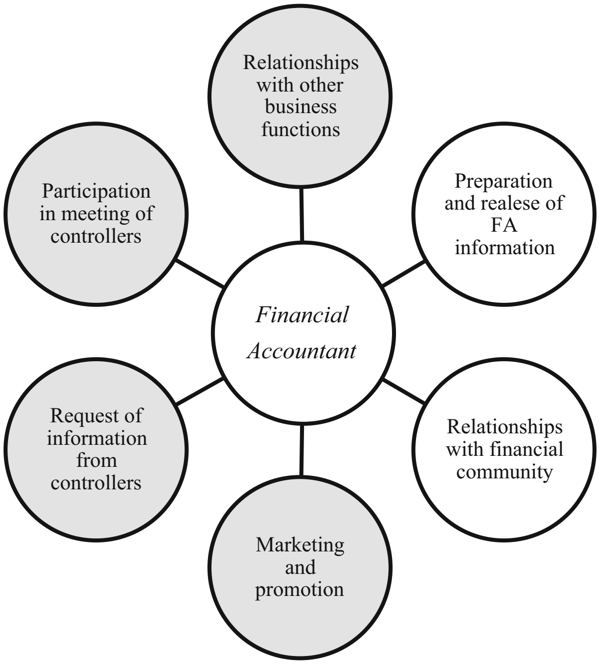

Fig. 5.5 Financial accountant's role: from the traditional function to a new enriched function. (*Spheres* with *gray background* concern the new activities of the financial accountant, whereas the other spheres regard the traditional activities of this kind of top manager.) (*Source*: author's presentation)

> The relationships between the management accountants and myself are, in any event, bidirectional. As a matter of fact, I usually ask the controller for information useful in understanding the internal business operation and firms' performance. I answer to an external need and provide this to the controller and MA in general. (Financial accountant, large Italian firm)

> The official meetings between our office and the controllers are weekly. In any event, every day I need to call or to e-mail the MA office (Financial accountant, large Italian firm)

> In the external reporting, more managerial data (such as trend analysis) is included. This information comes from the analysis provided by controllers. Hence it is relevant to stimulating controllers in order to have timely information. The relationship is bidirectional. (Financial accountant, large Italian firm)

> Even though we attempted to maintain a close relationships between our office and the controllers, IAS/IFRS adoption has led to two separate accounting systems, one for the MA office and the other for our office. (Financial accountant, large Italian firm)

5.5.1.3 Financial Accountant Interviews: The Convergence of Financial Accounting and Management Accounting

Preliminary interviews brought about some considerations on the managers' perception about the convergence of FA and MA in the Italian context.

Due to the close relationship between financial accountants and controllers, the former perceived the growing need to have an integrated accounting system able to manage both FA information and MA information. In those companies, where a properly integrated accounting system already exists, information is perceived by financial accountants as more timely, reliable and easier to manage. Furthermore, the integration of accounting systems implies more managerial and future-oriented information that may be disclosed to external stakeholders. This type of information is deemed functional for facilitating the understanding of the link between the firm's performance and the managerial results.

Nevertheless, respondents are aware that this additional type of disclosure requires a commensurate level of analysis that is useful in properly interpreting the firm's results. Hence the managerial information could be difficult to analyse for most stakeholders, unless they have additional tools and comments that enable them to better understand this additional information.

5.5.2 Controller Interviews

The interviews with the controllers sought to analyse the viewpoint of controllers on the convergence of FA and MA. They generally confirmed the financial accountants' perception on the growing information flow between controllers and financial accountants. Thus, controllers perceived a greater involvement in the process of the production of FA information. They even perceived that financial accountants depend on the MA function for the collection of managerial and future-orientated information.

Furthermore, controllers perceived the relevance of having an ERP that facilitates convergence and the information flow amongst managers.

> In my situation, the convergence between reporting for internal and reporting for external is affected by the presence of an ERP. It could be interesting to explore to what extent the presence of an ERP in a firm is able to affect the convergence of FA and MA. (Controller, Italian medium-size firm)

> We use an ERP. This ERP is useful only if there is a strong sponsorship by the firm's director. Otherwise it is difficult to understand and exploit the ERP's potentialities. (Controller, Italian medium-size firm)

> During some of our meetings about managerial control, financial accountants take part. However, the Chief Executive Officer (CEO) decides who has to participate or not in meetings. (Controller, Italian medium-size firm)

> In recent years, there have been several changes, due to the generational change and the emergence of new external stimuli. In particular, the generational change has brought about changes in corporate culture. (Controller, small Italian firm)

> Nowadays, there is a strong integration between controllers and financial accountants. Nonetheless, this type of integration is not sufficient enough. As a matter of fact, there is

> poor integration between our office and the other functions. This problem is really serious, because without integration, we risk wasting time to explaining to the other functions managerial information and firm's performance as a whole. (Controller, Italian medium-size firm)

> The convergence of MA and FA is even implicit in our firm's model. We often plan meetings where financial accountants, controllers and IT managers participate. These meetings are very useful. (Controller, large Italian firm)

> For our firm, IAS/IFRS adoption was not the main factor that led to the integration between FA and MA. Nevertheless, the new fair value vision, rather than the traditional one based on historical cost, has led to an increase in convergence in the accounting system. (Controller, Italian medium-size firm)

> The financial accountant usually asks me for information useful in producing notes to financial statements. This information generally regards risks and tools to properly manage them. (Controller, large Italian firm)

> In the income statements that I produce, there are no IAS. Thus, I need to make adjustments in order to compare the firm's performance that we disclose to the external market and our firm's economic and financial results. (Controller, large Italian firm)

Thus, interviews with controllers generally confirmed the preliminary results from financial accountant interviews; they also made it easier to identify some relevant insights into the process of convergence between FA and MA, which can be summarized as follows:

- the growing sharing and awareness of forward-looking and managerial information across the firm;
- a general increase in the control activities due to an increase in qualitative and forward-looking information in order to verify their reliability;
- a general increase in relationships amongst top managers, especially between financial accountants and management accountants;
- the growing relevance of a properly integrated accounting system, such ERP, which is able to manage both FA and MA information;
- a diversified and unclear perception of the role of IAS/IFRS in the alignment between FA and MA;
- a preliminary perception that the integrated accounting system may affect management satisfaction with the quality of corporate disclosure and the quality of managerial reporting.

5.6 Survey Analysis

To test the research hypotheses and corroborate the trends which have been indicated by the pilot interviews, a survey was sent to Italian managers. The survey results were analyzed through a Partial Least Squares-Structural Equation Modeling (PLS-SEM), applied to the research model.

The survey response rate was around 53.5 % (107 questionnaires were returned[35]), thus this rate may be considered in line with the prior literature on management accounting studies (Van der Stede et al. 2007[36]).

The following sections will introduce (1) descriptive statistics (Sect. 5.6.1); (2) the statistical model (Sect. 5.6.2); (3) the reliability and validity of data (Sect. 5.6.3); and (4) empirical findings (Sect. 5.6.4).

5.6.1 Descriptive Statistics

Tables 5.1, 5.2, 5.3, 5.4, 5.5 and 5.6 show some descriptive statistics for the research and control variables for the whole dataset and for the sub-datasets regarding financial accountants and controllers; Table 5.7 shows descriptive statistics for the components of the Integration of Accounting System variable for the whole dataset, while Table 5.8 shows frequency distribution (in %) for the components of the Integration of Accounting System variable for the whole dataset, demonstrating that Italian managers do not yet perceive a full and deep alignment between FA and MA, since values for each components are not so high. Despite these considerations, few respondents perceive low levels of integration.

Table 5.9 presents the correlation matrix and Pearson index for the whole dataset.

The correlation matrix and Pearson indexes highlight some statistically significant correlations among research variables. In particular, significant correlations were found between ERP and IAS/IFRS. This could be linked to the fact that firms with IAS/IFRS are generally more structured and better-organized than firms without IAS/IFRS, and thus are able to adopt integrated information systems, such as an ERP. Furthermore, correlations were found between ERP and Integration of Accounting System and between IAS/IFRS and Integration of Accounting System. This means that both integrated ERP and IAS/IFRS are correlated to Integration of Accounting System. Significant correlations were also found between: (1) ERP and Perceived Quality of FA; (2) Perceived Quality of FA and Integration of Accounting System; (3) Perceived Quality of MA and ERP; (4) Perceived Quality of MA and Integration of Accounting System; and (5) Perceived Quality of MA and Perceived Quality of FA.

Despite these considerations, correlations were generally moderate and did not affect the reliability of the research model.

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[35] 107 out of 200 questionnaires that have been sent to Italian managers.

[36] Van der Stede et al. obtained a response rate around 55 %.

Table 5.2 Descriptive statistics for the control variables for the whole dataset (N = 107)

Variable	Mean	Min	Max	Std. Dev.
Respondents' role	0.69	0	1	0.464
Respondents' age	1.89	1	3	0.588
Respondents' education	1.75	1	2	0.600
Respondents' gender	0.80	0	1	0.399
List	0.24	0	1	0.431
Industry	1.71	1	3	0.727
Size	1.59	1	3	0.658

Table 5.3 Descriptive statistics for the research variables for the sub-dataset of financial accountants (N = 33)

Variable	Mean	Min	Max	Std. Dev.
ERP	0.97	0	2	0.728
IAS/IFRS	0.45	0	1	0.506
Integration of accounting system	4.65	2.2	7	1.332
Perceived quality of FA	4.88	1	7	1.364
Perceived quality of MA	4.79	2	7	1.341

Table 5.4 Descriptive statistics for the control variables for the sub-dataset of financial accountants (N = 33)

Variable	Mean	Min	Max	Std. Dev.
Respondents' age	2.09	1	3	0.522
Respondents' education	1.76	1	3	0.561
Respondents' gender	0.85	0	1	0.364
List	0.15	0	1	0.364
Industry	1.73	1	3	0.719
Size	1.94	1	3	0.788

Table 5.5 Descriptive statistics for the research variables for the sub-dataset of controllers (N = 74)

Variable	Mean	Min	Max	Std. Dev.
ERP	1.14	0	2	0.689
IAS/IFRS	0.45	0	1	0.500
Integration of accounting system	4.37	2	7	1.174
Perceived quality of FA	4.58	1	7	1.658
Perceived quality of MA	4.27	1	7	1.690

Table 5.6 Descriptive statistics for the control variables for the sub-dataset of controllers (N = 74)

Variable	Mean	Min	Max	Std. Dev.
Respondents' age	1.80	1	3	0.596
Respondents' education	1.74	1	3	0.621
Respondents' gender	0.78	0	1	0.414
List	0.28	0	1	0.454
Industry	1.70	1	3	0.735
Size	1.43	1	3	0.526

Table 5.7 Descriptive statistics for the components of the integration of accounting system variable for the whole dataset (N = 107)

Variable	Mean	Min	Max	Std. Dev.
Consistency between information produced for internal purposes and information required for external purposes	4.65	1	7	1.733
Consistency between deadlines for management reporting and financial reporting	4.49	1	7	1.679
Consistency between short-term planning and financial GAAP	4.41	1	7	1.504
Consistency between medium and long-term planning and financial GAAP	4.04	1	7	1.517
Consistency between internal measures for operating income and the operating income published in the financial statements	4.71	1	7	1.473

Table 5.8 Relative frequency distribution (in %) for the components of the Integration of Accounting System variable for the whole dataset (1 very low integration, ..., 7 very high integration) (N = 107)

Variable	1	2	3	4	5	6	7
Consistency between information produced for internal purposes and information required for external purposes	6.54	7.48	9.35	17.76	24.30	18.69	15.89
Consistency between deadlines for management reporting and financial reporting	5.61	6.54	15.89	21.50	20.56	15.89	14.02
Consistency between short-term planning and financial GAAP	1.87	9.35	19.63	17.76	25.23	18.70	7.48
Consistency between medium and long-term planning and financial GAAP	2.80	17.76	15.89	21.49	25.23	12.15	4.67
Consistency between internal measures for operating income and the operating income published in the financial statements	1.87	5.61	13.08	21.49	28.04	16.82	13.08

With regard to Fig. 5.6, 69 % of survey respondents were controllers, with the remainder being CFOs (13 %), CEOs (4 %), Administrative Managers (5 %); Heads of Financial Accounting (4 %) and Other FA roles (5 %).

Figure 5.7 shows that 64 % of respondents (69 out of 107) are between 35 and 50 years old, 23 % (25 out of 107) are less than 35 years old and just 12 % (13 out of 107) are more than 50 years old.

Table 5.9 Correlation matrix and Pearson index for the whole dataset (N = 107)

	ERP	IAS/ IFRS	Integration of accounting system	PQFA	PQMA
ERP					
Pearson Sig (two-tailed)	1	0.322** 0.001	0.384** 0.000	0.196* 0.043	0.295** 0.002
IAS/IFRS					
Pearson Sig (two-tailed)	0.322** 0.001	1	0.310** 0.001	0.105 0.284	0.110 0.258
Integration of accounting system					
Pearson Sig (two-tailed)	0.384** 0.000	0.310** 0.001	1	0.508** 0.000	0.395** 0.000
Perceived quality of FA (PQFA)					
Pearson Sig (two-tailed)	0.196* 0.43	0.105 0.284	0.508** 0.000	1	0.634** 0.000
Perceived quality of MA (PQMA)					
Pearson Sig (two-tailed)	0.295** 0.002	0.110 0.258	0.395** 0.000	0.634** 0.000	1

*Correlation is significant at 0.05 (2-tails)
**Correlation is significant at 0.01 (2-tails)

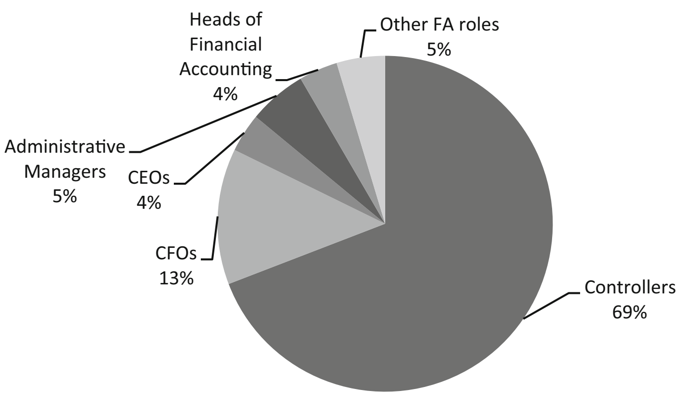

Fig. 5.6 Respondents' role (*Source*: author's presentation)

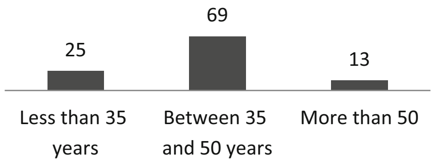

Fig. 5.7 Respondents' age (*Source*: author's presentation)

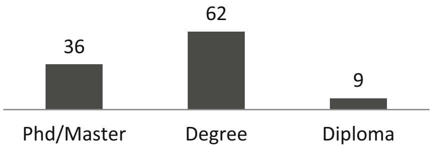

Fig. 5.8 Respondents' education (*Source*: author's presentation)

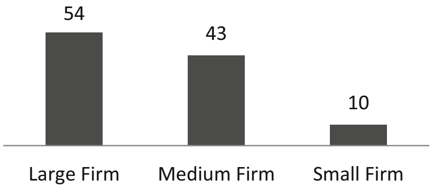

Fig. 5.9 Firm's size (*Source*: author's presentation)

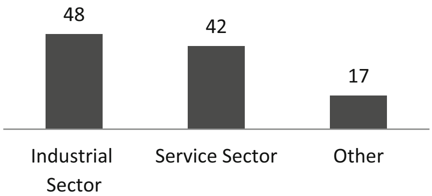

Fig. 5.10 Firm's industry (*Source*: author's presentation)

Figure 5.8 shows that 58 % of respondents (62 out of 107) have a degree, 34 % (36 out of 107) have a Ph.D. or have attended Master's courses, and just 8 % (9 out of 107) with just a diploma.

Figure 5.9 shows that around 50 % of respondents (54 out of 107) work for large firms, whereas 40 % (43 out of 107) work for medium-size firms and 9 % (10 out of 107) for small firms.

Figure 5.10 shows that 45 % (48 out of 107) of respondents work in the industrial sector, whereas 39 % (42 out of 107) work in the service sector and 16 % (17 out of 107) for other industries.

5.6.2 Statistical Model

The research hypotheses were tested performing Partial Least Squares-Structural Equation Modeling (PLS-SEM). Specifically the PLS-SEM was performed for the whole dataset of answers by the 107 managers. To provide more perspective on the results, the whole dataset of respondents was divided on the basis of the respondents' role; the same path analysis was also performed for the other two datasets (33 of the respondents were financial accountants and 74 of the respondents were controllers).

PLS-SEM is a method of modeling a casual network of latent variables, aimed at maximizing the explained variance of the endogenous latent variables (Wold

1985a, b; Wold et al. 1986; Freedman 1987; Hair et al. 2012). The PLS-SEM provides estimates of the relations between variables and constructs (measurement model) and among constructs (structural model) (Kallunki et al. 2011). The PLS-SEM method consists of two main steps: (1) the analysis of the reliability and validity of the measurement model, and (2) the analysis of the structural model (Hulland 1999).

The use of this statistical model has been widely documented across a number of disciplines, such as strategic management (Hulland 1999), marketing (Henseler et al. 2009; Hair et al. 2012), accounting (Lee et al. 2011) and information system research (Ringle et al. 2012). Prior studies that have used PLS-SEM have pointed out the strengths of this statistical approach. In particular, PLS-SEM is suitable for analyzing: (1) complex relationships with multiple dependent variables; (2) issues with a scarcity of prior theoretical literature; (3) small sample size; (4) non-normal data; and (5) formative measures of latent variables (Gefen and Straub 2005; Marcoulides and Saunders 2006; Goodhue et al. 2007; Chapman and Kihn 2009; Ringle et al. 2012). Furthermore, the PLS-SEM approach seems to be particularly useful in measuring the reflective relations between research constructs and variables which are believed to reflect the unobserved construct (Bisbe et al. 2007; Chapman and Kihn 2009). Taking advantage of the aforementioned benefits due to the use of the PLS-SEM method, Hair et al. concluded that the PLS-SEM could be even seen as a "silver bullet" to estimate casual models[37] (Hair et al. 2012). The PLS-SEM analysis was conducted using the SmartPLS software package (Ringle et al. 2005).

5.6.3 Reliability and Validity of PLS-SEM Models

As shown in the previous section, the PLS-SEM approach requires assessing the reliability and validity of both the outer (measurement model) and the inner (structural) model (Chin 1998). This analysis was performed for the whole dataset of respondents and for the other two datasets (controllers dataset and financial accountants dataset).

To assess the outer model, the following measures were evaluated: (1) composite reliability (internal consistency reliability); (2) convergent validity for the latent variables; (3) discriminant validity for the latent variables; (4) the factor loading for each indicator included in the latent variable; and (5) the cross-validated

[37] Hair et al. (2012) compared benefits offered by PLS-SEM with those offered by CB-SEM, concluding that the former is better than the latter "*Another is that few researchers viewed PLS-SEM as a "silver bullet" or panacea for dealing with empirical research challenges such as smaller sample sizes* (Marcoulides and Saunders 2006; Sosik et al. 2009). *These negative perceptions of PLS-SEM are unfortunate and shortsighted. When properly applied, the method has many benefits not offered by CB-SEM*." (Hair et al. 2012: 139).

Table 5.10 Reliability tests of the assessment of the outer model

Latent construct	AVE	Composite reliability	Chronbach's alpha	Cross validated communality
Integration of accounting system for the whole dataset (N = 107)	0.609	0.885	0.837	0.609
Integration of accounting system for the sub-dataset of financial accountants (N = 33)	0.654	0.903	0.865	0.483
Integration of accounting system for the sub-dataset of controllers (N = 74)	0.592	0.877	0.824	0.071

communality[38] (Diamantopoulos and Winklhofer 2001; Tenenhaus et al. 2005; Henseler et al. 2009).

The assessment of the outer model was conducted both for the whole dataset and for the sub-datasets of controllers and financial accountants in order to verify the reliability of the latent construct (Integration of Accounting System).

As shown in Table 5.10, the composite reliability values and Cronbach's alpha of Integration of Accounting System achieve satisfactory levels for each dataset (>0.7) (Nunnally and Bernstein 1978; Hair et al. 2012). The convergent validity for the latent construct was measured through the Average Variance Extracted (AVE) (Fornell and Larcker 1981). As shown by Götz et al. (2010), AVE for the latent construct should be higher than 0.50; Table 5.10 shows that the AVE of the Integration of Accounting System for each dataset achieves a level of validity above the 0.5 threshold (Götz et al. 2010).[39]

In order to verify the discriminant validity, a cross-loadings procedure was performed for each dataset (Chin 1998; Götz et al. 2010). Moreover, a bootstrapping test was performed to assess the significance of each indicator's weights (Chin 1998; Cheung and Lau 2011; Davison and Hinkley 2013; Byrne 2013). As shown in Table 5.11, each indicator included in the latent construct presents a satisfactory level of statistical significance, for both the whole dataset (N = 107) and the sub-datasets of financial accountants (N = 33) and controllers (N = 74). Finally, cross-validated communality values are positive for the latent variable of the research model (Integration of Accounting System). Therefore, it is possible to conclude that the quality of the outer model is satisfactory (Tenenhaus et al. 2005; Vinzi et al. 2010).

The assessment of the inner model was conducted both for the whole dataset and for the sub-datasets of controllers and financial accountants, by performing the following tests: (1) R^2 of dependent variables[40]; (2) estimates of the effect size by

[38] The blindfolding approach was used to evaluate the cross validated communality (Wold 1985a).

[39] An AVE value of more than 0.50 indicates that the latent variable explains more than half of its indicators' variance (Hair et al. 2012).

[40] The R^2 value explains to which extent the model is able to explain and predict the endogenous variables (Ringle et al. 2012).

Table 5.11 Outer model

Variable	Loading (N = 107) p-value	Loading (N = 33) p-value	Loading (N = 74) p-value
Consistency between information produced for internal purposes and information required for external purposes → Integration of accounting system	0.756 0.000***	0.738 0.000***	0.758 0.000***
Consistency between deadlines for management reporting and financial reporting → Integration of accounting system	0.643 0.000***	0.695 0.000***	0.611 0.000***
Consistency between short-term planning and financial GAAP → Integration of accounting system	0.890 0.000***	0.919 0.000***	0.880 0.000***
Consistency between medium and long-term planning and financial GAAP → Integration of accounting system	0.854 0.000***	0.880 0.000***	0.843 0.000***
Consistency between internal measures for operating income and the operating income published in the financial statements → Integration of accounting system	0.735 0.000***	0.788 0.000***	0.724 0.000***

Factor loadings for integration of accounting system
*Statistically significant at the $0.05 < p < 0.10$ level (two-tailed; bias-corrected bootstrap confidence intervals)
**Statistically significant at the $0.01 < p < 0.05$ level (two-tailed; bias-corrected bootstrap confidence intervals)
***Statistically significant at the $0 < p < 0.01$ level (two-tailed; bias-corrected bootstrap confidence intervals)

Table 5.12 R^2 for the research model

Variable (Y)	R^2 (N = 107) Whole dataset (%)	R^2 (N = 33) Financial accountants (%)	R^2 (N = 74) Controllers (%)
Integration of accounting system	19.1	30.3	16.3
Perceived quality of FA	26.7	27.7	39.1
Perceived quality of MA	49.5	43.2	57.1

using F-test[41]; (3) cross-validated redundancy (CVR); and (4) estimates for path coefficients (Tenenhaus et al. 2005; Henseler et al. 2009; Vinzi et al. 2010).

Table 5.12 shows R^2 for the research model, for the whole dataset, for the sub-dataset of financial accountants and for the sub-dataset of controllers.

The R^2 of Perceived Quality of MA highlights a satisfactory level for each dataset, as does the R^2 of Perceived Quality of FA. Integration of Accounting System presents a satisfactory level of R^2 for the sub-dataset of financial accountants and moderate levels of R^2 for the whole dataset of respondents and for the

[41] f^2 effect-size evaluates the independent variable's incremental explanation of a dependent variable (Cohen 2013).

Table 5.13 Effect size (f^2) for research variables on the whole dataset (N = 107)

Variable	Effect size (f^2) on integration of accounting system	Effect size (f^2) on perceived quality of MA	Effect size (f^2) on perceived quality of FA
ERP	0.120	0.055	0.001
IAS/IFRS	0.044	0.001	0.002
Integration of accounting system		0.010	0.310
Perceived quality of FA		0.448	
Perceived quality of MA			
List		0.002	
Size		0.024	
Industry		0.018	
Respondent's education		0.005	
Respondent's gender		0.008	
Respondent's age		0.005	
Respondent's role		0.008	

sub-dataset of controllers. Nevertheless, these values of R^2 may be accepted if the number of exogenous latent variables explaining the endogenous latent variable is low (Henseler et al. 2009).

Tables 5.13, 5.14 and 5.15 show the effect size (f^2) for all the research variables on the whole dataset, on the sub-dataset of financial accountants and on the sub-dataset of controllers, respectively. By analyzing Table 5.13 it is possible to notice that the effect size on Perceived Quality of FA presents a high value for Integration of Accounting System for the whole dataset. Furthermore, the effect size values on Perceived Quality of MA are high for Perceived Quality of FA. Therefore, these two variables seem to be particularly relevant for the research model. For the other research variables, nothing more can be said.

By analyzing Table 5.14, it is possible to notice that the effect size on Perceived Quality of FA presents a high value for Integration of Accounting System (as in the whole dataset) and for the ERP variable for the sub-dataset of financial accountants. Furthermore, the effect size on Integration of Accounting System is also high for the ERP variable. For the other research variables, nothing more can be said.

An analysis of Table 5.15 reveals that the effect size values on Integration of Accounting System present high values for both the ERP variable and for the IAS/IFRS variable for the sub-dataset of controllers. Furthermore, the effect size value on Perceived Quality of FA is particularly high for Integration of Accounting

Table 5.14 Effect size (f^2) for research variables on the sub-dataset of financial accountants (N = 33)

Variable	Effect size (f^2) on integration of accounting system	Effect size (f^2) on perceived quality of MA	Effect size (f^2) on perceived quality of FA
ERP	0.236	0.005	0.232
IAS/IFRS	0.029	0.180	0.081
Integration of accounting system		0.114	0.223
Perceived quality of FA		0.092	
Perceived quality of MA			
List			
Size		0.056	
Industry		0.006	
Respondent' education		0.017	
Respondent' gender			
Respondent's age		0.008	

System. Finally, the effect size on Perceived Quality of MA presents a particularly high value for Perceived Quality of FA. For the other research variables, nothing more can be said.

Cross-validated redundancy[42] values for all endogenous variables are positive (CVR, Table 5.16). Thus, considering all the tests discussed in this section, it is possible to conclude that both the measurement model and the structural model show satisfactory levels of quality (Tenenhaus et al. 2005).

Considerations about path coefficients derived from the path model are discussed in Sect. 5.6.4.

5.6.4 *Empirical Findings*

The following sections provide empirical results, by applying the PLS-SEM method on the whole dataset (Sect. 5.6.4.1), on the sub-dataset of financial accountants (Sect. 5.6.4.2), and on the sub-dataset of controllers (Sect. 5.6.4.3).

[42] A blindfolding approach was performed to evaluate the cross-validated redundancy (CVR) (Wold 1985a).

Table 5.15 Effect size (f^2) for research variables on the sub-dataset of controllers ($N = 74$)

Variable	Effect size (f^2) on integration of accounting system	Effect size (f^2) on perceived quality of MA	Effect size (f^2) on perceived quality of FA
ERP	0.299	0.194	0.174
IAS/IFRS	0.205	−0.012	−0.144
Integration of accounting system		−0.003	0.574
Perceived quality of FA		0.656	
Perceived quality of MA			
List		−0.093	
Size		0.118	
Industry		0.135	
Respondent's education		0.038	
Respondent's gender		0.006	
Respondent's age		−0.154	

Table 5.16 Cross-validated redundancy (CVR) for endogenous variables

Variable	CVR (whole dataset)	CVR (financial accountants)	CVR (controllers)
Integration of accounting system	0.050	0.162	0.071
Perceived quality of FA	0.271	0.080	0.345
Perceived quality of MA	0.489	0.165	0.433

Section 5.6.4.4 provides a synthesis of PLS-SEM results for the three samples of respondents.

5.6.4.1 Empirical Findings: PLS-SEM Analysis on the Whole Dataset

The empirical results of PLS-SEM analysis for the whole dataset are reported in Table 5.17 and in Fig. 5.11. In detail, Table 5.17 shows regression weights for the path analysis, with direct, indirect and total effects, whereas Fig. 5.11 summarizes the research model and direct path coefficients.

The PLS-SEM analysis for the whole dataset identifies interesting findings.

In particular, PLS-SEM results highlight the fact that the level of integrated ERP does not have a positive and direct effect on Perceived Quality of FA; thus the Hp1a

Table 5.17 Regression weights for the path analysis on the whole dataset. Direct, indirect and total effects

Variable	Path coefficient (p-value) Direct effects	Indirect effects	Total effects
ERP → Integration of accounting system	**0.329 (0.001*****)		**0.329 (0.001*****)
ERP → Perceived quality of FA	0.007 (0.937)	0.174 (0.862)	**0.181 (0.079***)
ERP → Perceived quality of MA	**0.194 (0.037****)	0.937 (0.351)	**0.327 (0.003*****)
IAS/IFRS → Integration of accounting system	**0.200 (0.052***)		**0.200 (0.034****)
IAS/IFRS → Perceived quality of FA	−0.060 (0.490)	0.106 (0.916)	0.046 (0.629)
IAS/IFRS → Perceived quality of MA	0.019 (0.830)	0.046 (0.963)	0.065 (0.558)
Integration of accounting system → Perceived quality of FA	**0.529 (0.000*****)		**0.529 (0.000*****)
Integration of accounting system → Perceived quality of MA	0.097 (0.426)	0.296 (0.768)	**0.393 (0.003*****)
Perceived quality of FA → Perceived quality of MA	**0.560 (0.000*****)		**0.560 (0.000*****)
List → Perceived quality of MA	−0.046 (0.619)		−0.046 (0.639)
Size → Perceived quality of MA	**0.141 (0.058***)		**0.141 (0.058***)
Respondents' age → Perceived quality of MA	−0.052 (0.563)		−0.052 (0.544)
Respondents' Role → Perceived quality of MA	−0.071 (0.393)		−0.071 (0.399)
Industry → Perceived quality of MA	0.101 (0.193)		0.101 (0.177)
Respondents' education → Perceived quality of MA	0.047 (0.453)		0.047 (0.490)
Respondents' gender → Perceived quality of MA	−0.074 (0.345)		−0.074 (0.330)

The statistical significant values are shown in bold
*Statistically significant at the $0.05 < p < 0.10$ level (two-tailed; bias-corrected bootstrap confidence intervals)
**Statistically significant at the $0.01 < p < 0.05$ level (two-tailed; bias-corrected bootstrap confidence intervals)
***Statistically significant at the $0 < p < 0.01$ level (two-tailed; bias-corrected bootstrap confidence intervals)

(*The use of an integrated ERP positively affects the level of perceived quality in FA*) is not confirmed (the relationship is, indeed, not statistically significant).

On the other hand, ERP has a positive and direct effect on Integration of Accounting System (direct path coefficient: 0.329), thus confirming the Hp1c

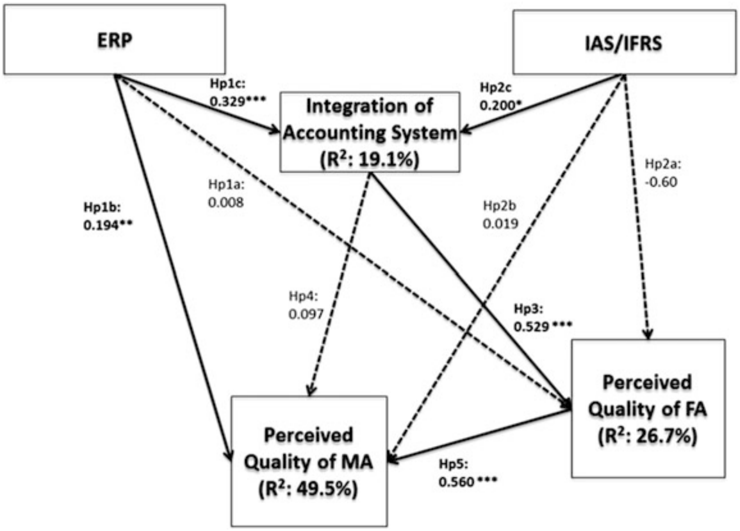

Fig. 5.11 Path coefficients on the whole dataset (based on SmartPLS software package) (*Source*: author's presentation)

(*The use of an integrated ERP positively affects the level of integration of accounting system)*. Therefore, a higher level of integrated ERP brings about a higher level of Integration of Accounting System, and vice-versa.

Further, ERP has a positive and direct effect on the Perceived Quality of MA (direct path coefficient: 0.194), confirming Hp1b (*The use of an integrated ERP positively affects the level of perceived quality in MA*). Therefore, a higher level of integrated ERP brings about a higher level of management satisfaction with the overall quality in management accounting, and vice-versa.

The indirect effect between ERP and Perceived Quality of MA is not significant. This means that Integration of Accounting System does not behave as a mediator between ERP and Perceived Quality of MA; therefore the level of integration of accounting system does not mediate the relationship between the level of integrated ERP and management satisfaction with the overall quality in MA.

The path analysis between Integration of Accounting System and Perceived Quality of FA is positive and significant (direct path coefficient: 0.529); thus Hp3 (*The level of integration of accounting system positively affects the level of perceived quality in FA*) is supported. Therefore, the higher level of integration of accounting system brings about a higher level of management satisfaction with the overall quality in FA, and vice-versa.

Furthermore, the direct effect between Integration of Accounting System and Perceived Quality of MA is not significant; thus Hp4 (*The level of integration of accounting system positively affects the level of perceived quality in MA*) is not supported for the whole dataset of respondents (the relationship is, indeed, not statistically significant). However, while both paths between ERP and Integration of Accounting System and between Integration of Accounting System and Perceived Quality of FA are statistically significant, the indirect effect between ERP and Perceived Quality of FA is not statistically significant. This result means that the Integration of Accounting System does not mediate the relationship between ERP and Perceived Quality of FA.

The direct path between IAS/IFRS and Integration of Accounting System is positive and significant (direct path coefficient: 0.200), thus confirming Hp2c (*The use of IAS/IFRS positively affects the level of integration of accounting system)*. Therefore, companies which use IAS/IFRS have higher level of integration of accounting system than companies which do not adopt IAS/IFRS.

On the other hand, Hp2a and Hp2b are not supported, because neither the path between IAS/IFRS and Perceived Quality of FA nor the path between IAS/IFRS and Perceived Quality of MA are statistically significant. Furthermore, both indirect paths between IAS/IFRS and Perceived Quality of FA and between IAS/IFRS and Perceived Quality of MA are not statistically significant; thus, in the research model, the Integration of Accounting System is not able to mediate both the relationship between IAS/IFRS and Perceived Quality of FA or the relationship between IAS/IFRS and Perceived Quality of MA.

Finally, PLS-SEM results highlight that Perceived Quality of FA has a direct and positive effect on Perceived Quality of MA for the whole dataset of respondents, supporting Hp5 (*The level of perceived quality in FA positively affects the level of perceived quality in MA*). Therefore, the higher the level of management satisfaction with the overall quality of FA, the higher the level of management satisfaction with the overall quality of MA, and vice-versa.

The indirect path between Integration of Accounting System and Perceived Quality of MA is not statistically significant, and thus Perceived Quality of FA is not able to mediate the relationship between Integration of Accounting System and Perceived Quality of MA.

Some interesting considerations could also arise from an analysis of the path coefficients of the control variables, even if no hypotheses are developed about these issues. As shown in Table 5.17, among the control variables, only the Size variable has a direct effect on the Perceived Quality of MA (direct path coefficient: 0.141). This effect means that respondents in smaller firms perceive a better quality of MA system than do respondents in larger firms.

The explanatory power of Perceived Quality of MA is quite high ($R^2 = 49.5$ %), whereas the explanatory power of Integration of Accounting System ($R^2 = 19.1$ %) and of Perceived Quality of FA ($R^2 = 26.7$) is moderate; therefore, further investigations are needed.

5.6.4.2 Empirical Findings: PLS-SEM Analysis for the Sub-dataset of Financial Accountants

The empirical results of PLS-SEM analysis for the sub-dataset of financial accountants are reported in Table 5.18 and in Fig. 5.12. Specifically, Table 5.18 shows

Table 5.18 Regression weights for the path analysis on the sub-dataset of financial accountants. Direct, indirect and total effects

Variable	Path coefficient (p-value)		
	Direct effects	Indirect effects	Total effects
ERP → Integration of accounting system	**0.457 (0.046**)**		**0.457 (0.046**)**
ERP → Perceived quality of FA	**−0.514 (0.006***)**	0.220 (0.149)	−0.294 (0.106)
ERP → Perceived quality of MA	−0.079 (0.739)	0.093 (0.636)	0.014 (0.958)
IAS/IFRS → Integration of accounting system	0.161 (0.470)		0.161 (0.470)
IAS/IFRS → Perceived quality of FA	**0.277 (0.056*)**	0.077 (0.524)	**0.354 (0.020**)**
IAS/IFRS → Perceived quality of MA	**0.392 (0.058*)**	0.157 (0.271)	**0.549 (0.011**)**
Integration of accounting system → Perceived quality of FA	**0.481 (0.002***)**		**0.481 (0.002***)**
Integration of accounting system → Perceived quality of MA	0.378 (0.202)	0.131 (0.332)	**0.509 (0.046**)**
Perceived quality of FA → Perceived quality of MA	0.272 (0.196)		0.272 (0.196)
Size → Perceived quality of MA	0.246 (0.316)		0.246 (0.316)
Respondents' age → Perceived quality of MA	0.079 (0.607)		0.079 (0.607)
Education → Perceived quality of MA	0.106 (0.503)		0.106 (0.503)
Industry → Perceived quality of MA	0.072 (0.745)		0.072 (0.745)

The statistical significant values are shown in bold
*Statistically significant at the $0.05 < p < 0.10$ level (two-tailed; bias-corrected bootstrap confidence intervals)
**Statistically significant at the $0.01 < p < 0.05$ level (two-tailed; bias-corrected bootstrap confidence intervals)
***Statistically significant at the $0 < p < 0.01$ level (two-tailed; bias-corrected bootstrap confidence intervals)

regression weights for the path analysis, with direct, indirect and total effects, whereas Fig. 5.12 summarizes the research model and direct path coefficients.

To avoid multicollinearity problems, Size and Respondents' Gender are deleted from the control variables.

Results for the sub-dataset of financial accountants confirm the general trend in the analysis conducted for the whole dataset, underlining some peculiarities.

In particular, for the sub-dataset of financial accountants (as well as for the whole dataset) Hp1c is supported (direct path coefficient: 0.457). Therefore, a

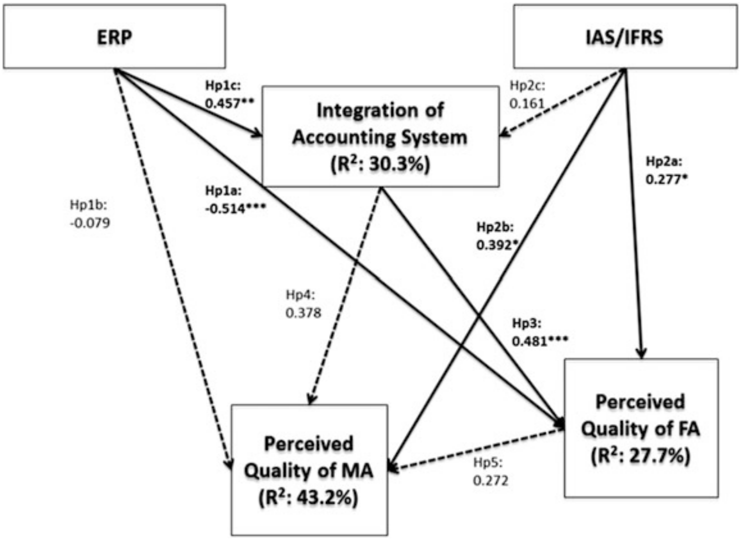

Fig. 5.12 Path coefficients on the sub-dataset of financial accountants (based on SmartPLS software package) (*Source*: author's presentation)

higher level of integrated ERP brings about a higher level of Integration of Accounting System, and vice-versa.

Hp1a is not supported (as well as for the whole dataset), since the path between ERP and Perceived Quality of FA is negative and statistically significant (direct path coefficient: −0.514). This result means that, according to the viewpoint of financial accountants, the use of an integrated ERP negatively affects the management satisfaction with the overall quality of FA.

Hp1b is not supported (differently from the whole dataset). Therefore, financial accountants perceive that the use of an integrated ERP does not affect their perceived quality of the MA system.

Hp4 is not confirmed (as well as for the whole dataset), since the path coefficient between Integration of Accounting System and Perceived Quality of MA is not statistically significant, whereas Hp3 is supported (as well as for the whole dataset; path coefficient between Integration of Accounting System and Perceived Quality of FA: 0.481).

IAS/IFRS has positive and direct effects on Perceived Quality of FA (direct path coefficient: 0.227) and on Perceived quality of MA (direct path coefficient: 0.392), confirming Hp2b and Hp2a; however, Hp2c is not confirmed (the relationship between IAS/IFRS and Integration of Accounting System is not statistically significant).

Hp5 is not supported (differently from the whole dataset of respondents), because the relationship between management satisfaction with the overall quality of FA information and management satisfaction with the overall quality of MA reporting is not statistically significant.

Furthermore, any indirect effects resulted statistically significant (as for the whole dataset); therefore there are no mediators or mediated effects.

The explanatory power of Perceived Quality of MA is quite high ($R^2 = 43.2\ \%$), whereas, as for the whole dataset, the explanatory power of Integration of Accounting System ($R^2 = 30.3\ \%$) and Perceived Quality of FA ($R^2 = 27.7$) need further investigations.

5.6.4.3 Empirical Findings: PLS-SEM Analysis for the Sub-dataset of Controllers

The empirical results of the PLS-SEM analysis for the sub-dataset of controllers are reported in Table 5.19 and in Fig. 5.13. Specifically, Table 5.19 shows regression weights for the path analysis, with direct, indirect and total effects, whereas Fig. 5.13 summarizes the research model and direct path coefficients.

The PLS-SEM empirical results for the sub-dataset of controllers generally confirm the trend for the whole dataset of respondents, highlighting some peculiarities.

In particular, Hp1c is supported (direct path coefficient between ERP and Integration of Accounting System: 0.299). This result is in line with the ones achieved for the whole dataset and for the sub-dataset of financial accountants.

Furthermore, Hp1b (direct path coefficient between ERP and Perceived Quality of MA: 0.194) and Hp1a (direct path coefficient between ERP and Perceived Quality of FA: 0.174) are confirmed. Therefore, controllers perceived the relevance of having a high integrated ERP within the company. According to their perception, the higher level of integrated ERP brings an improvement to the overall quality of both FA and MA information. Moreover, they perceived that the higher level of integrated ERP brings a higher level of integration to the accounting system.

With regard to IAS/IFRS, Hp2c is confirmed (direct path coefficient between IAS/IFRS and Integration of Accounting System: 0.205), whereas the direct path coefficient between IAS/IFRS and Perceived Quality of FA is significant and negative (direct path coefficient: −0.144). These results mean that IAS/IFRS negatively affects the perceived quality of FA, in accordance with the controllers' viewpoint; thus Hp2b is not supported. Therefore, according to their perception, firms which use IAS/IFRS have a lower quality of FA information than firms which do not use IAS/IFRS in preparing financial statements.

Moreover, Hp2b is not confirmed (the relationship between IAS/IFRS and Perceived Quality of MA is not statistically significant). This result is in line with the one achieved for the whole dataset and opposite to the one achieved for the sub-dataset of financial accountants. As well as for the whole dataset and the sub-dataset of financial accountants, Hp4 is not confirmed, and thus the Integration of Accounting System does not have a positive and direct effect on Perceived Quality of MA (the relationship between Integration of Accounting System and Perceived Quality of MA is not statistically significant).

Table 5.19 Regression weights for the path analysis on the sub-dataset of controllers. Direct, indirect and total effects

Variable	Path coefficient (p-value)		
	Direct	Indirect	Total
ERP → Integration of accounting system	**0.299 (0.001*****)		**0.299 (0.001*****)
ERP → Perceived quality of FA	**0.174 (0.046****)	**0.172 (0.003*****)	**0.346 (0.000*****)
ERP → Perceived quality of MA	**0.194 (0.028****)	**0.226 (0.008*****)	**0.419 (0.000*****)
IAS/IFRS → Integration of accounting system	**0.205 (0.061***)		**0.205 (0.061***)
IAS/IFRS → Perceived quality of FA	**−0.144 (0.090***)	**0.117 (0.096***)	−0.027 (0.808)
IAS/IFRS → Perceived quality of MA	−0.012 (0.914)	−0.018 (0.821)	−0.030 (0.792)
Integration of accounting system → Perceived quality of FA	**0.574 (0.000*****)		**0.574 (0.000*****)
Integration of accounting system → Perceived quality of MA	−0.003 (0.982)	**0.376 (0.000*****)	**0.373 (0.006*****)
Perceived quality of FA → Perceived quality of MA	**0.656 (0.000*****)		**0.656 (0.000*****)
List → Perceived quality of MA	−0.093 (0.371)		−0.093 (0.371)
Size → Perceived quality of MA	0.118 (0.141)		0.118 (0.141)
Respondents' age → Perceived quality of MA	−0.154 (0.115)		−0.154 (0.115)
Industry → Perceived quality of MA	**0.135 (0.095***)		**0.135 (0.095***)
Education → Perceived quality of MA	0.038 (0.631)		0.038 (0.631)
Gender → Perceived quality of MA	0.006 (0.934)		0.006 (0.934)

The statistical significant values are shown in bold
*Statistically significant at the $0.05 < p < 0.10$ level (two-tailed; bias-corrected bootstrap confidence intervals)
**Statistically significant at the $0.01 < p < 0.05$ level (two-tailed; bias-corrected bootstrap confidence intervals)
***Statistically significant at the $0 < p < 0.01$ level (two-tailed; bias-corrected bootstrap confidence intervals)

Hp3 is confirmed for the sub-dataset of controllers (direct path coefficient between Integration of Accounting System and Perceived Quality of FA: 0.574); however Hp5 is not confirmed (the path between Perceived Quality of FA and Perceived Quality of MA is not statistically significant).

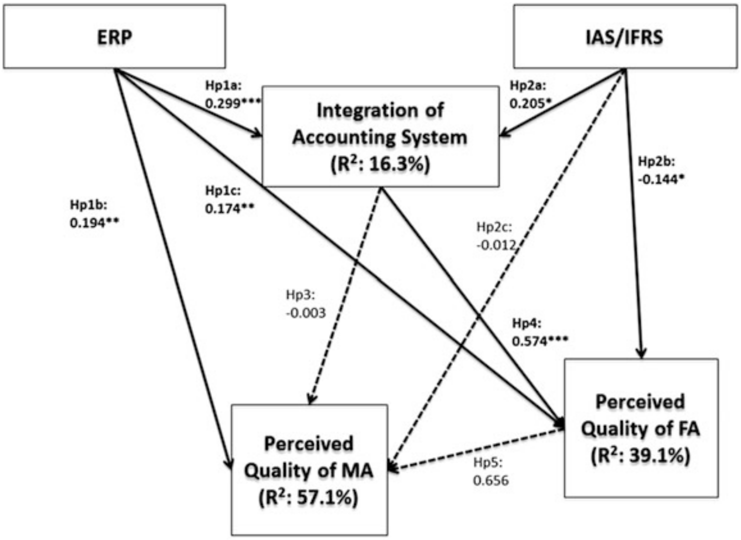

Fig. 5.13 Path coefficients for the sub-dataset of controllers (based on SmartPLS software package) (*Source*: author's presentation)

Among the control variables, only the Industry has a weak direct effect on Perceived Quality of MA (direct path coefficient: 0.135).

For the sub-dataset of controllers, the analysis of indirect effects opens interesting avenues of research that deserve to be better analysed in future research. In detail, the indirect effect between ERP and Perceived Quality of FA is positive and significant (indirect path coefficient: 0.173), which means that the Integration of Accounting System mediates the relationship between ERP and Perceived Quality of FA. Similar considerations could arise from the analysis of the other indirect effects. As a matter of fact, the indirect effect between ERP and Perceived Quality of MA is positive and significant (indirect path coefficient: 0.266), thus signifying that the Integration of Accounting System also mediates the relationship between ERP and Perceived Quality of MA.

Furthermore, the indirect effect between IAS/IFRS and Perceived Quality of FA is also positive and significant (indirect path coefficient: 0.117), thus indicating that the Integration of Accounting System mediates the relationship between IAS/IFRS and Perceived Quality of FA.

Finally, the indirect effect between Integration of Accounting System and Perceived Quality of MA is positive and significant (indirect path coefficient: 0.376), thus signifying that for controllers the Perceived Quality of FA mediates the relationship between Integration of Accounting System and Perceived Quality of MA.

The explanatory power of Perceived Quality of MA is quite high, the highest of the three samples ($R^2 = 57.1$ %), whereas the explanatory power of Integration of

Table 5.20 Summary results for the three samples of respondents

Hypothesis	Whole dataset	Financial accountants	Controllers
Hp1a (ERP → Perceived quality of FA)	Unsupported	Supported	Supported
Hp1b (ERP → Perceived quality of MA)	Supported	Unsupported	Supported
Hp1c (ERP → Integration of accounting system)	Supported	Supported	Supported
Hp2a (IAS/IFRS → Perceived quality of FA)	Unsupported	Supported	Unsupported
Hp2b (IAS/IFRS → Perceived quality of MA)	Unsupported	Supported	Unsupported
Hp2c (IAS/IFRS → Integration of accounting system)	Supported	Unsupported	Supported
Hp3 (Integration of accounting system → Perceived quality of FA)	Supported	Supported	Supported
Hp4 (Integration of accounting system → Perceived quality of MA)	Unsupported	Unsupported	Unsupported
Hp5 (Perceived quality of FA → Perceived quality of MA)	Supported	Unsupported	Unsupported

Accounting System ($R^2 = 16.3$ %) is quite moderate, and thus needs further investigations. On the other hand, the explanatory power of Perceived Quality of FA is the highest of the three samples of respondents ($R^2 = 39.1$) and is quite high in absolute terms.

5.6.4.4 Summary PLS-SEM Results for the Three Samples of Respondents

Table 5.20 summarizes the PLS-SEM results for the three samples of respondents, highlighting which hypotheses are supported for the whole dataset, for the sub-dataset of financial accountants and for the sub-dataset of controllers.

As shown in Table 5.20, Hp1c (*The use of an integrated ERP positively affects the level of integration of accounting system*) and Hp3 (*The level of integration of accounting system positively affects the level of perceived quality in FA*) are supported for every level of analysis; therefore, all respondents perceived that the use of an integrated ERP is able to improve the level of Integration of Accounting System. Furthermore, respondents perceived that the level of Integration of Accounting System is able to improve the overall quality of FA information.

Finally Hp4 (*The level of integration of accounting system positively affects the level of perceived quality in MA*) is not supported, because the path coefficient between Integration of Accounting System and Perceived Quality of MA is not statistically significant for the three levels of analysis (whole database, financial accountants and controllers).

Appendix: Survey

Personal Features

(1) Gender (M/F)
(2) Age (<35; from 35 to 50; >50)
(3) Education (Diploma; Degree; Ph.D./Master's courses)
(4) Role (controllers; financial accountants; others-please specify)

Firm's Features

(1) Firm's size (less than 15 employees; more than 15 and less than 250 employees; more than 250 employees)
(2) Is your company listed (YES/NO)
(3) Which is the sector of your company? (industrial sector; finance sector; service sector; other)

Convergence of Financial Accounting and Management Accounting

(1) *To which extent is the information produced for internal purposes in accordance with information required for external purposes? (0 very low,…, 7 very high)*
(2) *To which extent are deadlines for management reporting and financial reporting harmonized? (0 very low,…, 7 very high)*
(3) *To which extent is short-term planning and budgeting based on valuation methods in accordance with financial GAAP? (0 very low,…, 7 very high)*
(4) *To which extent is medium and long-term planning and budgeting based on valuation methods in accordance with financial GAAP*? *(0 very low,…, 7 very high)*
(5) *To which extent is the internal measure for operating income in accordance with the operating income published in the financial statements? (0 very low,…, 7 very high)*

(6) *To which extent do you perceive an improvement in the quality of management accounting due to a high level of integration between financial accounting and management accounting? (0 very low,. . ., 7 very high)*
(7) *To which extent do you perceive an improvement in the quality of Financial Accounting due to a high level of integration between financial accounting and management accounting? (0 very low,. . ., 7 very high)*
(8) *To which extent do you perceive that your firm's IT is integrated between financial accounting and management accounting? (0 not integrated,. . ., 2 totally integrated)*
(9) *Does your firm use IAS/IFRS*?

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Chapter 6
Discussion on the Alignment of Financial Accounting to Management Accounting in the Italian Context

6.1 Introduction

This chapter discusses the empirical findings and the theoretical and practical contributions of the present book.

The starting point of the book was the identification of the three levels of analysis of Financial Accounting (FA) development paths, with the aim of demonstrating that, recently, more and more voluntary disclosures in terms of forward-looking and non-financial information are being produced by both listed and non-listed firms, in order to assure the creation of long-lasting value for a company. This trend is confirmed by the previous literature (see, among others, Beattie et al. 2004; Dainelli and Giunta 2011), by professional associations (see, among others, AICPA 1994; ASB 2014) and by the interviews carried out for the present work. In particular, during these interviews the Italian respondents pointed out the following main changes in the overall FA flow of information:

– an increased attention to risks and risk management;
– an extension of the management and discussion analysis, especially in the part in which the future orientation and managerial implications are described;
– a reduction in the discretion that managers use in the production of the mandatory disclosure;
– an increase in press releases, presentations and other forms of voluntary disclosure regarding future and strategic information about the firm.

Respondents also observed that both financial accountants and controllers (or management accountants) are gradually changing their role from a traditional to a new one, in which the relationships with other top managers and the firm's offices are becoming more and more pivotal. These changes may bring about a new hybrid figure of manager, as previously theorized by Caglio (2003), who envisions the introduction, within a company, of a new hybrid figure of manager that is somewhere between a financial accountant and the other professional managers

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(Caglio 2003). In fact, respondents stressed the need for a broad and deep consciousness and understanding of the overall flow of information from a twofold perspective: managerial and accounting.

Therefore, during the interview phase, the respondents identified some relevant, even preliminary, insights which can be summarized as follows:

– the growing sharing and awareness of forward-looking and managerial information across the firm;
– a general increase in the control activities due to an increase in qualitative and forward-looking information in order to verify its reliability;
– a general increase in relationships among top managers, especially between financial accountants and management accountants;
– the growing relevance of a properly integrated accounting system, such as ERP, which is able to manage both FA and MA information;
– a diversified and unclear perception of the role of IAS/IFRS in the alignment between FA and MA;
– a preliminary perception that the integrated accounting system may affect management satisfaction regarding the quality of corporate disclosure and the quality of managerial reporting.

These fruitful insights are the basis for the empirical analysis of the survey questionnaires, the results of which are discussed below.

This work is consistent with previous studies that have revealed the need for a convergence between FA and Management Accounting (MA) and contributes to the call for more research on the possible success and on consequences of such integration (Quagli 2011; Zambon 2011; Taipaleenmäki and Ikäheimo 2013). Furthermore, this work extends considerations developed by previous authors (Hemmer and Labro 2008; Ikäheimo and Taipaleenmäki 2010; Weißenberger and Angelkort 2011), by taking into account both publicly held firms and non-publicly held firms in the Italian setting. In this regard Taipaleenmäki and Ikäheimo (2013: 323) defined "*the convergence of management accounting and financial accounting to be a contemporary phenomenon, in which both intentional integrating and aligning actions of human actors and changes in contingencies are shifting MA and FA towards one another, forming newly observable connections between them, through which they affect and interact with each other. The manifestations and outcomes of this convergence, which are mainly intentional but sometimes also unintentional, are involved in all elements of accounting (accounting processes, accounting information users and producers, accounting methods and standards, and accounting information systems), and they can be observed within the technical and technological as well as the behavioral and organizational domain. Although our analysis on convergence mainly concerns larger and publicly listed business organizations, some manifestations of convergence can also be observed in SMEs and within the public sector*."

The alignment of FA to MA could happen, since FA and MA have similar purposes. As a matter of fact, FA, like MA, encompasses control and decision-making. Specifically, FA control regards the fact that management is accountable to stakeholders (stewardship accounting), whereas FA decision-making regards the decisions taken by investors on the basis of disclosed information (Hemmer and Labro 2008). MA control is composed of planning, administrative and cultural controls, and compensation systems, whereas MA decision-making is composed of strategic and operational decisions (Zimmerman 2001; Malmi and Ikäheimo 2003; Malmi and Brown 2008).

Furthermore, financial standards and the FA flow of information in general, as well as MA tools and techniques, have evolved from a backward-looking historical perspective to a forward-looking fair value one and, in this framework, the internal managerial perspective has become relevant even for accounting standards (Ikäheimo and Taipaleenmäki 2010).

This work is in line with that of other authors who have identified a new era, in which MA should serve as more than just a borrower of data to FA; in fact, Zambon used the following term to define the current era: "*managerialisation of financial reporting*" (DiPiazza et al. 2006; Zambon 2011).

Interesting considerations could arise from the analysis of the relationships between the integration of accounting systems (research measure which is the synthesis of the convergence process of FA and MA) and the other research variables, thereby answering the research question "*What is the Italian managers' perception of the alignment between financial and management accounting?*".

In the end, empirical results (from both the survey questionnaires and the pilot interviews) in the Italian setting have contributed to the international and Italian literature on this topic by exploiting managers' perceptions as follows: (1) by identifying the antecedents and consequences of the integration between FA and MA; (2) by exploring the relationship between management satisfaction with the overall quality of FA and with the overall quality of MA; and (3) by analyzing potential differences between the viewpoints of controllers and financial accountants.

Furthermore, empirical findings from the survey have revealed further interesting considerations about the mediation role that the integration of accounting systems can play with regard to the other research variables.

Specifically, some relevant contributions emerge from an analysis of the results that are homogenous for the three levels of analysis (whole database, financial accountants and controllers). In particular, empirical findings from the survey reveals that the high level of integration in ERP improves the level of integration of accounting systems for each level of analysis, and vice-versa. This result is consistent with that part of the literature which has stated that Information Technology (IT) could be a useful basis for changes in the accounting system, sometimes even leading to changes and relative integration (Innes and Mitchell 1990; Cobb et al. 1995; Booth et al. 2000; Lukka 2007; Ikäheimo and Taipaleenmäki 2010; Taipaleenmäki and Ikäheimo 2013). In this regard, Booth et al. (2000) asserted that IT is able to set the premises for high levels of information integration. The contribution of the present work is to highlight that the more ERP is perceived as integrated by managers, the greater and deeper the convergence of FA and MA will be.

Furthermore, the relationship between the integration of accounting systems and the perceived quality of MA is not confirmed. Therefore, on the basis of the empirical findings in the Italian context, the convergence of the two disciplines seems not to affect the perceived quality of managerial practices and information. This could be due to the fact that the level of integration in the accounting systems seems to be especially linked to external needs and requirements, as confirmed by the fact that the level of integration of accounting improves the perceived quality of FA for each level of analysis. As a matter of fact, the higher the convergence of FA and MA is, the higher the management satisfaction with FA. This finding is consistent with the previous literature, which highlighted that the integration of accounting systems may foster the perceived quality of financial disclosure, especially due to the close relationship between FA and controlling departments (Jones and Luther 2005). An important contribution may arise from the fact that the present study is based on an internal perspective for measuring the proxy of FA information quality.

Nonetheless the aforementioned considerations on the possible effects of such convergence process, frequency distribution[1] for the components of the integration of the accounting system demonstrated that Italian managers do not yet perceive a full and deep alignment between the two areas, since values are not so high. This reveals that, in Italy, this process of alignment of FA to MA, within large and Small and Medium Enterprises (SMEs) may currently be in a promising initial phase.

From a methodological standpoint, this study attempts to estimate the integration of accounting systems, on the basis of Weißenberger and Angelkort's metric (2011) and to directly measure the quality of MA and FA through the top managers' viewpoints. This internal and subjective perspective is not without limitations, even if it points out a fruitful internal perspective.

The remaining sections are organized as follows. Section 6.2 explores the antecedents and consequences of the convergence of FA and MA; Sect. 6.3 explores the relationship between management satisfaction with the overall quality of FA and management satisfaction with the overall quality of MA. Section 6.4 explores the viewpoints of controllers and financial accountants regarding these topics. Section 6.5 underlines further insights on the mediation role played by the integration of accounting systems. Sections 6.6 and 6.7 discuss practical contributions, limitations and future developments.

[1] See Chap. 5 of the present work.

6.2 The Antecedents and Consequences of the Alignment of Financial Accounting to Management Accounting

Empirical findings from the Italian context (see Chap. 5) have contributed to studies investigating the convergence of FA and MA. The present work has found empirical evidence to support the fact that FA and MA are not two separate areas. On the contrary, they are intimately correlated to each other, thereby showing interesting and vast theoretical and practical implications. Even if the theoretical argumentation in support of these issues is increasing, the topic is quite recent, and few empirical studies have been done to test the antecedents and consequences of the integration of accounting systems. This lack of empirical studies could be due to the difficulties in collecting data to demonstrate the integration of accounting systems in firms. No data on this topic is available on free database; therefore, studies must be carry out on the basis of surveys and detailed interviews (Weißenberger and Angelkort 2011).

The present study has contributed to identifying the antecedents and consequences of the alignment process of FA to MA. Specifically, antecedents could be seen as the exogenous variables that have some effects on the alignment between FA and MA, whereas the consequences could be seen as the endogenous variables that are affected by the above-mentioned convergence.

In the present study, exogenous factors are the level of integration in ERP and IAS/IFRS adoption. The former positively affects the level of integration of the accounting system for all three levels of analysis, as seen in the previous section. Therefore, the higher the level of the integrated information system within a company is, the higher will be the level of integration of the accounting system, confirming the research hypothesis and that of the literature stream (Innes and Mitchell 1990; Taipaleenmäki and Ikäheimo 2013).

As assumed, the latter exogenous factor also has some effects on the integration of accounting systems for the whole database and for the controller database, even if no relationship was found from the perspective of financial accountants. The results have revealed that, especially for controllers, the application of IAS/IFRS positively affects the level of integration of accounting systems. This result is consistent with the previous literature, which agrees that the harmonization of financial reporting standards has represented a huge incentive to the convergence of MA and FA (Marchi et al. 2008; Procházka 2011; Quagli 2011; Zambon 2011; Taipaleenmäki and Ikäheimo 2013). Despite these considerations, further analysis in this sense is necessary, since financial accountants do not perceive the relevance in using IAS/IFRS in order to obtain a high level of integration between FA and MA information, methods and tools.

Furthermore, regarding the consequences of the convergence process between FA and MA, empirical findings have demonstrated that the integration of the accounting system has a direct effect on perceived quality of FA for each level of analysis (as seen in the previous section), whereas no direct correlations have been found between the integration of accounting systems and the perceived quality of

MA. With regard to the relationship between the alignment of FA to MA and management satisfaction with the overall quality of FA, the results are consistent with that part of the literature which states that the integration of accounting systems may foster the perceived quality of financial disclosure (Jones and Luther 2005).

However, even though no direct paths have been found between the level of integration of the accounting system and the perceived quality of MA, interesting considerations arise from the analysis of the controller database. Indeed, the indirect effect between integration of accounting systems and perceived quality of MA is positive and significant; thus, for controllers, management satisfaction with the quality of FA mediates the relationship between the integration of accounting systems and management satisfaction with the quality of MA. This result is consistent with the results obtained by Weißenberger and Angelkort (2011), since they found that there is no direct effect between the integration of accounting systems and controllership output quality, as measured by the managers' perceived quality of the controlling department. In line with the present work, they found an indirect correlation between these two variables, a relationship that is fully mediated by the consistency of the financial language, as measured by the managers' perceived quality of the FA information produced by the integrated accounting system.

6.3 The Relationship Between the Quality of Financial Accounting and the Quality of Management Accounting

This study opens interesting avenues on the relationship between the quality of FA and the quality of MA, from the top managers' perspective.

More specifically, considering the whole database, the level of perceived quality of FA positively affects the level of perceived quality of MA, even though no correlations were found in the other two levels of analysis. This result contributes to that part of the literature which theorizes that FA rules may bring about changes or improvements in MA (Cinquini and Tenucci 2011; Quagli 2011; Zambon 2011), even if further investigation is necessary.

However, this preliminary result is particularly interesting, because it underlines an empirical link between the two levels of perceived quality. In particular, it means that if managers perceive a high quality of FA, they also perceive a high quality of MA, confirming an important link between these two fields of study and the previous literature on this topic (see also Hemmer and Labro 2008).

6.4 The Viewpoints of Controllers and Financial Accountants on Convergence

The analysis of the controller database reveals some relevant considerations, which partially diverge from the results produced by the analysis of the financial accountants database. These differences could be due to different aims, priorities and perceptions between the two different roles in the firm.

Specifically, controllers perceive that the level of integration in the ERP used within a company is positively correlated to the quality of MA, whereas financial accountants do not have this perception. This result contributes to the literature on MA that focuses on the impacts of the improvements and changes in management control systems and practices due to ERP adoption (Maccarone 2000; Granlund and Malmi 2002; Scapens and Jazayeri 2003; Sangster et al. 2009; Kallunki et al. 2011). As a matter of fact, some authors have argued that the debate surrounding this topic is still open and requires further investigation in order to understand how ERP may affect MA. In fact, in this regard, some authors have found quite limited improvements in management control systems and practices due to ERP adoption (see, among others, Booth et al. 2000).

Financial accountants do not have this perception, which seems quite reasonable, since those kinds of managers, even if they are interrelated with controllers, cannot have an overall perception of the quality of MA reporting and methods.

Furthermore, controllers, as well as financial accountants, perceive that the level of integration in ERP is positively correlated to the quality of FA. These findings are consistent with that part of the literature which has found that ERP systems could produce a positive and general impact in terms of the reliability, timeliness, comparability and relevance of accounting information for external and internal users (Davenport 1998; Poston and Grabski 2001; Hitt and Wu 2002; Marchi 2003; Mauldin and Richtermeyer 2004; Gattiker and Goodhue 2005).

Furthermore, as seen in the previous section, controllers perceive that IAS/IFRS adoption is able to increase the level of integration of accounting system, whereas financial accountants do not have this perception.

The analysis of the financial accountant database highlights some relevant considerations, which partially diverge from the results produced by the analysis of the controller database.

Specifically, financial accountants perceive that the adoption of IAS/IFRS could be useful in improving both the quality of FA and the quality of MA. These results, which are not confirmed by controller database, may contribute to the literature that analyzes the link between IAS and changes or improvements in managerial accounting practices (Jermakowicz 2004; Jones and Luther 2005; Marchi et al. 2008; Hemmer and Labro 2008; Ikäheimo and Taipaleenmäki 2010). On the other hand, controllers do not have this perception perhaps because they do not have a deep understanding of financial standards, even if they are deeply interrelated with financial accountants.

6.5 Further Findings: The Mediation Role of the Integration of Accounting Systems

The present study reveals some preliminary considerations about the mediation role played by the integration of accounting systems, even if this is not the main topic of the present book and, thus, deserves further analysis.

In detail, empirical findings (by analyzing indirect effects) for the controller database[2] reveal that the integration of the accounting system plays a mediation role regarding the level of integration in ERP and the perceived quality of FA.

In a similar vein, the integration of the accounting system is also a mediator between the level of integration in ERP and the quality of MA as perceived by controllers.

These preliminary results are particularly interesting, since controllers perceive the relevance of having high levels of convergence between FA and MA in order to exploit the potentialities of an integrated ERP to improve the quality of the overall FA and the quality of the overall MA.

Finally, the integration of the accounting system also appears to mediate the relationship between IAS/IFRS adoption and the quality of FA as perceived by controllers.

This preliminary result is particularly interesting, since controllers perceive the relevance of having high levels of convergence between FA and MA in order to exploit the potentialities from adopting IAS/IFRS to improve the quality of the overall FA.

However, these results need to be further analyzed, since they open interesting avenues of research. In this regard, it could be helpful to carry out in-depth interviews.

6.6 Practical Implications

Firms can benefit from the present study, since it can support managers in choosing the level of integration of the accounting system, taking into account the possibility of exploit endogenous factors to increase the level of the convergence between FA and MA, and lead to a better understanding of the benefits the alignment of FA to MA could bring to the company.

Firms could also benefit from the present study in defining a new managerial profile that is capable of managing the information flow among different areas in the firm and, especially, in concurrently managing accounting and managerial information and tools.

[2] No indirect effects were found for the whole and the financial accountant database.

Finally, the present work lays the groundwork for new frontiers of research and teaching in the Italian and in international contexts in general, as already theorized by some authors (Quagli 2011; Zambon 2011). From a research standpoint, it could be interesting to develop research groups and journals on this topic. From a teaching standpoint, it could be interesting to revisit academic programs and introduce the topic of the convergence in both FA and MA courses. Especially in Italy, where the division between the two fields of study was rooted in the Italian tradition of Business Administration, course content must not be overhauled, but it could be interesting to point out the relevance of considering FA and MA as a unique, vast and complex discipline, with interesting relationships to identify and analyze.

In fact, this study has demonstrated the close proximity of FA and MA, due to some changes regarding external factors (such as an integrated ERP or the adoption of IAS/IFRS), and an increase in top managers' sensibility to this topic. Every day, top managers and employees in general are faced with huge challenges, thereby increasing their internal relationships and overcoming communication barriers. They are increasingly aware of the importance of having a unique business and accounting view, by taking advantage of technological tools, such as ERP, which are able to properly connect different parts and offices of a firm, even if these are located in different geographical areas. However, the information system alone is not sufficient, since managers need to develop a deeper awareness in sharing information inside the firm and with stakeholders.

6.7 Limitations and Further Developments

Some limitations of the present study could arise from the relatively small sample of managers operating in the Italian setting and from the difficulties to properly measure endogenous variables; thus caution should be used in generalizing such findings. Furthermore, some measures are defined by managerial perceptions and could therefore induce some bias.

Finally, the geographical context, corporate culture, as well as other exogenous factors could affect the multiple relationships among variables, creating a scenario that is particularly complex to analyze.

However, it could be interesting to extend the context of this analysis to other countries and to other top managers in order to understand the diversity among cultures, managerial roles and geographical contexts. Furthermore, it could be useful to extend the same analysis by dividing the whole dataset on the basis of the average level of integration of the accounting system. This could emphasize the relationships among variables for both low and high levels of integration of the accounting system.

Other interesting future research may be directed at: (1) carrying out the same analysis but dividing the database on the basis of the firm's size, the fact that a firm is listed or non-listed, the firm's industry, the respondents' gender, and the respondents' age; (2) more thoroughly investigating if and in which way MA may be able to affect FA; (3) exploring the features that hybrid function of the new role (for both MA and FA) may have; (4) exploring which features of ERP and IAS/IFRS may affect the alignment of FA to MA; (5) carrying out empirical studies on the perception of managers about the role of fair value in fostering the convergence process between FA and MA; and (6) exploring the mediation role played by the integration of the accounting system.

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