INVESTMENT POLICY AND ECONOMIC PERFORMANCE: THE CASE OF ITALIAN LISTED COMPANIES

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Abstract

This study focuses on the investment policy of companies listed on the Italian Stock Exchange in the period between 2007 and 2013.

In particular this research concentrates on the industrial and technological sectors, which have deep differences in terms of internal structure and business strategy. In fact industrial companies are likely to have a rigid structure, while the technological ones are more elastic and dynamic. This element directly influences the overall strategic focus, because technology requires firms to adapt more easily and quickly to the needs of consumers and to the aggressive policy of competitors. These views lead to different kinds of investments. In fact this research starts with the hypothesis that in the industrial sector tangible elements are much more relevant, while in the technological system intangibles are prevalent.

As a consequence, there emerged the curiosity to investigate if the specific type of investments have an impact on the economic performance, in terms of operating margin (EBIT).

This study bases its analysis on trends and relationships between tangibles, intangibles and operating income and they were tested empirically by analyzing the financial data extracted from consolidated balance sheets of all companies of the period between 2007 and 2013 provided by a database, called AIDA.

Using the Pearson correlation ratio, the authors aimed at finding evidence of a hypothetical correlation between tangible and intangible investments and EBIT, in order to verify if they are a direct or an indirect cause affecting the trend of the economic performance.

Key-words: investments, tangible, intangible, assets, EBIT, listed companies, technological, industrial.

Track 14: General Tracks (n.58: Business Analytics)

Introduction

Intangible and tangible investments do not have the same importance from one industry to another. The choice of the business in which a company operates is the key that determines its organization and capital structure (Pisoni, Brusa et. al., 1996).

In particular, it means having a clear idea of the product or service to realize, of the market in which a firm wants to compete, of techniques and instruments to be used and of the way strategies are put into practice.

This is the reason why we have decided to focus on Italian listed companies belonging to the industrial and technological sectors, in fact we want to compare and contrast two different situations and understand their investment policy and the related impact on the economic performance.

By starting with the main hypothesis that industrial companies invest more in tangible assets and technological ones in intangibles, our first aim is to study the trend of the two types of investments in the period between 2007 and 2013 in order to monitor if the economic crisis affected these two sectors.

In addition, our research concentrates on the economic margin, related to the core activities of the companies considered.

The third step is to combine these two elements, investments and operating income (EBIT, Earnings Before Interests and Taxes), in order to evaluate if there is a correlation between the two. In particular, this purpose can be demonstrated by the Pearson correlation ratio.

As a consequence the final part of this empirical research is based on the study of the impact of the specific investment policy on the operating income.

The remainder of this study is organized as follows. In Paragraph 1, we provide the theoretical background of the topic presented. The methodology and the definition of the sample of companies is described in Paragraph 2. In this section, we also include the presentation of the research questions and of the phases of analysis. Our results are presented in Paragraph 3 and conclusions in the last part of the research.

1. Literature

The discipline of Business Administration defines the company as a system, composed of many elements which are interrelated (Santesso, 2010; Pisoni, Brusa et al., 1995; Ferrero, 1987). It is a unique system because every single company is an independent entity, with its own internal structure (Amit and Schoemaker, 1993).

As we mentioned in the foreword, defining the specific business in which every firm operates means developing distinctive competences and creating a strategy that allows the company to be competitive on the market (Myers, 2013; Franco and Bourne, 2004).

Several authors based their research on studying the capital structure of companies in order to monitor their impact in terms of competitiveness, value and performance (Lombardi, Manfredi et.al., 2014; Mezentceva and Mezentceva, 2014; Bobillo, Rodriguez-Sanz and Tejerina-Gaite, 2006; Hall, 2001; Dierickx and Cool, 1989).

Other studies decided to concentrate on intangible assets and on the related benefit for a company investing in them (Denicolai, Zucchella and Strange, 2014; Cohen and Vlismas, 2013; Chiucchi, 2013; Heiens, Leach and McGrath, 2007; Casta, Escaffre and Ramond, 2005; Hand and Lev, 2004; Megna and Mueller, 1991; Grabowski and Mueller, 1978). Some researchers decided to analyze the different role of tangible and intangible assets as resources (Galbreath, 2005) and some others concentrated on one sector in particular and to monitor the impact of a specific investment policy (Makris, 2008).

Our analysis fits into this framework but the purposes are different. In fact it is aimed at comparing and contrasting two different situations: the first one represented by technological companies, oriented to an intangible investment policy, and the second one represented by industrial firms, which mostly own tangible assets.

After this first phase, our study goes deeply into the evaluation of the impact of these investments on the economic performance. In this case the economic performance is represented by the operating income (EBIT, Earning Before Interests and Taxes), which is the margin deriving from the company core business activities.

As a consequence our research represents a sort of extension of previous studies above-mentioned because firstly we concentrate on two important sectors in Italy and secondly this study covers a very long period, from 2007 to 2013.

Moreover we also concentrate on tangibles and by making this comparison between the two sectors and consequently between two different kinds of investment policies, we want to monitor the economic results of companies pursuing one policy or another.

Thanks to this analysis and the results obtained, we may consider the opportunities of growth and development of these companies included in the sample. We may notice the differences emerging after deciding to make a particular investment.

2. Methodology

2.1 The sample and methods

This analysis focuses on two different groups of companies listed on the Italian Stock Exchange.
In particular, we have chosen those listed on the sectoral index called FTSE All-share Industrials, and those listed in another sectoral index called FTSE All-share Technology. The first index includes firms operating in the industrial field, while the second one refer to companies working in the technological sector.
We have decided to concentrate on these two groups because they are extremely different in their structure and in the policy of investments. This difference may help us analyse the trend of the related investments over the period between 2007 and 2013. Moreover these typical characteristics can help us study if the dynamic of investments can influence the economic performance of these firms.
Data were extracted from AIDA, which is a database containing comprehensive information on companies in Italy.
We used the consolidated balance sheets of all companies and we focused on information about tangible and intangible assets and EBIT (Earnings Before Interest and Taxes).
We want to specify that data provided in our figures all refer to the mean of the single element analyzed for the specific sector.
AIDA provided data of 90 companies out of 93. We had to exclude three firms: Stmicroelectronics, belonging to the technological sector, Cerved Information Solutions and Gruppo Ceramiche Ricchetti, both industrial companies.
Table 1 shows all the Italian limited companies linked to the technological field.

Table 1	Technological companies
	Be
	Best Union Company
	Cad it
	Dada
	Eems
	Ei Towers
	Engineering
	Esprinet
	Eurotech
	Exprivia
	Fullsix
	It Way
	NoemaLife
	Olidata
	Reply
	Sesa
	Tiscali
	Txt

Table 1. *Italian companies listed on the technological sectoral index*

Table 2 shows all the firms of the sample, related to the industrial sector.

Table 2	Industrial companies	
	Ambienthesis	Finmeccanica
	Ansaldo Sts	Gefran
	Astaldi	Ima
	Astm	Interpoump
	Atlantia	Irce
	Autostrade Meridionali	Italcementi
	Bastogi	Italmobiliare
	Beghelli	Nice
	Biancamano	Panariagroup
	Biesse	Poligrafica
	Bolzoni	Premuda
	Buzzi Unicem	Prima Industrie
	Carraro	Prysmian
	Cembre	Reno De Medici
	Cementir Holding	Sabaf
	Cir	Saes Getters
	Cnh Industrial	Salini Impregilo
	Cofide	Save
	D'amico	Servizi Italia
	Danieli & C.	Sias
	Datalogic	Sintesi
	Delclima	Tesmec
	El.En.	Trevi Fin Industriale
	Fidia	Vianini Industria
	Fiera Milano	Vianini Lavori
	Fincantieri	Zignago Vetro

Table 2. *Italian companies listed on the industrial sectoral index*

2.2 Research questions and phases of analysis

The present research is based on the following main hypothesis: companies listed on the sectoral index called FTSE All-share Industrials, invested more in tangible assets, while those listed in the sectoral index called FTSE All-share Technology, focused their business on intangibles.

To reach the goals of this study, we need to formulate two research questions:

- RQ1: what are the trends of the specific type of investments in the industrial and in the technological sectors? And what about the EBIT?

- RQ2: Is there a correlation between the specific investment policy followed by each sector, and the related operating income?

The research methodology follows three phases:

a) Phase 1: Definition of the items monitored. As we analyse the annual financial reporting of a group of Italian listed companies, we refer to the IAS-IFRS principles (Dezzani, F., Biancone, P.P. and Busso, D., 2014), and in particular to IAS 1, *Presentation of Financial Statement*, IAS 16, *Property, Plant and Equipment*, IAS 38, *Intangible Assets*, and IAS 40, *Investment Property;*

b) Phase 2: Empirical analysis and findings. It involves an analysis of the information derived from the sample. The research methodology only uses the information provided in the consolidated financial statements because it is sufficient to answer the research questions.

With reference to *RQ1*, we firstly want to demonstrate that the main hypothesis is true. As a consequence, we have to consider the mean of the investments of the specific sector in order to understand what kind of policy is followed by the two groups. Secondly, we monitor the trend of the investments and the EBIT between 2007 and 2013 to underline which group suffered less from the economic crisis. Then we compare the two situations in order to introduce the second research question.

With reference to *RQ2,* for each group of companies, we firstly calculate the Pearson correlation ratio between the tangible investments and EBIT, as regards the industrial field, and between the intangibles and the operating income, for the technological companies. Thanks to this ratio, we can analyse the impact of investments on the overall operating result in order to evaluate the effects of a specific investment policy. The analysis of the correlation between tangible assets and EBIT on one hand, and intangibles and EBIT on the other aims at discovering if there is a strict link between them and, if it is confirmed, how strongly the two are connected.

As mentioned above, the Pearson correlation ratio (p) is used to identify a positive or negative correlation between the specific investments and the EBIT. For this, it is necessary to underline the following conditions:

- if $p > 0$ there is a direct correlation;
- if $p = 0$ there is no correlation;
- if $p < 0$ there is a indirect correlation;
- if $0 < p < 0.3$ the correlation is weak;
- if $0.3 < p < 0.7$ the correlation is moderate;
- if $p > 0.7$ the correlation is strong.

c) Phase 3: Conclusions and limitations of the research.

3. Findings

First of all, before analyzing the data obtained, we want to give further details and definitions.

IAS 38 states that an *intangible asset* is an identifiable non-monetary asset without physical substance. Intangible assets are initially measured at cost, subsequently measured at cost or using the revaluation model, and amortised on a systematic basis over their useful lives, unless the asset has an indefinite useful life, in which case it is not amortised.

The three critical attributes of an intangible asset are:

- identifiability;

- control: power to obtain benefits from the asset;
- future economic benefits, in terms of revenues or fewer future costs.

As regards tangible assets, AIDA provides overall information concerning both investment property and property, plants and equipment. Unfortunately, there is no distinction between the two categories.

Phase 2 concerns the stages of our research and the related comments.

Starting with the RQ 1, figure 1 underlines what kind of investments were made by technological companies during the period between 2007 and 2013. The data refer to the mean of the sector for each year.

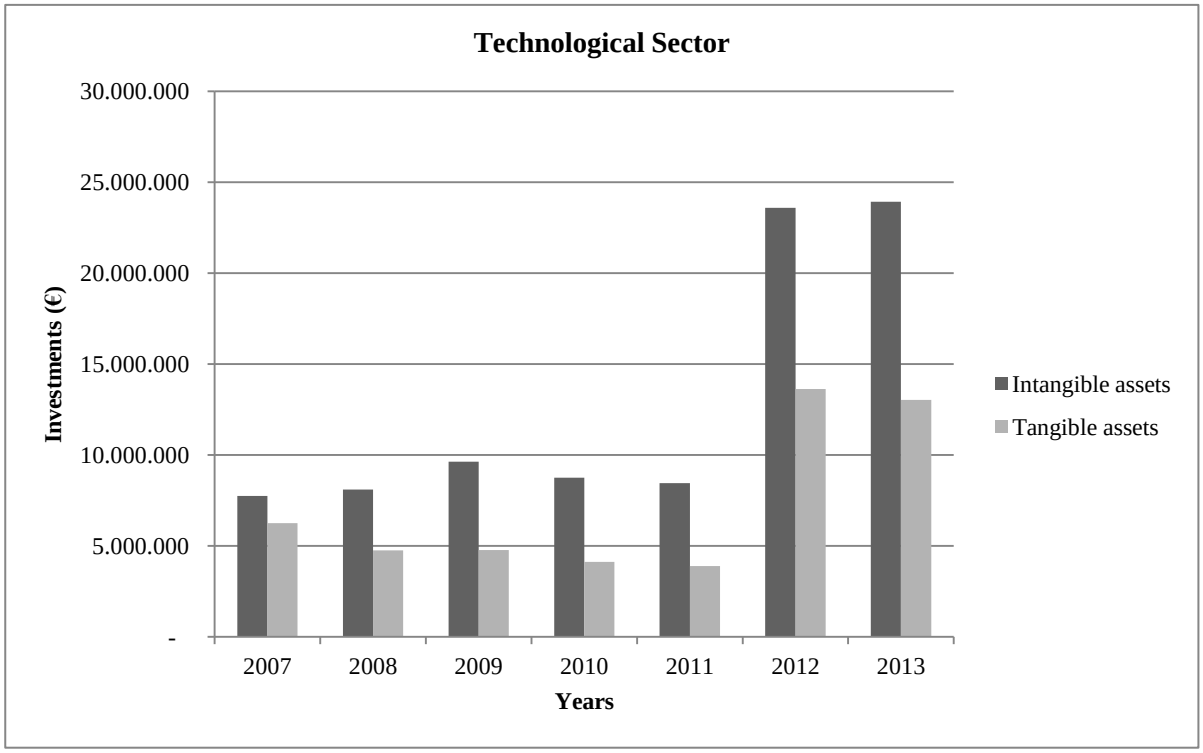

Figure 1. *Investments in Italian companies listed on the Technology sectoral Index*

Figure 2 instead shows what kind of investments were made by industrial companies during the same period. The data refer to the mean of the sector for each year.

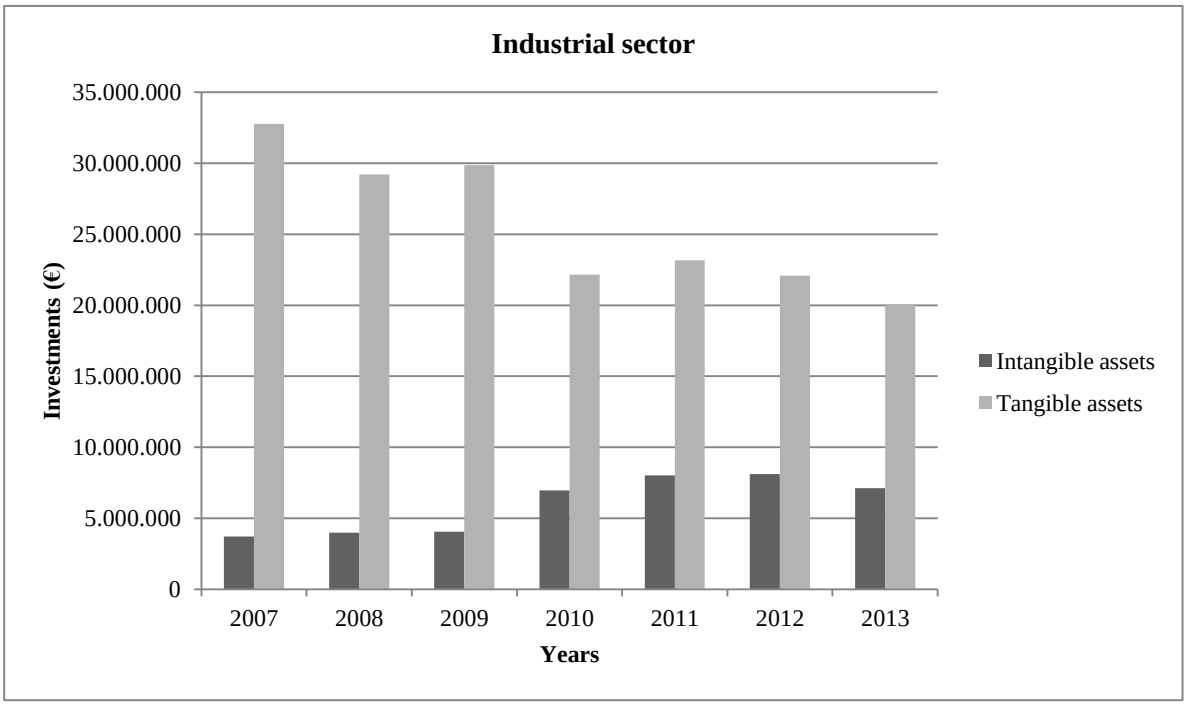

Figure 2. *Investments in Italian companies listed on the Industry sectoral Index*

The two figures demonstrate that the initial main hypothesis is true. In fact companies listed in the Italian Stock Exchange and belonging to the technological sector invest the majority of their capital in intangible assets, while listed firms related to the Industry index have the tendency to invest in tangible assets.

After individuating the specific policy of investments, we want to focus on the trend of these elements and on the operating income in order to understand first of all if they have the same evolution during the period analyzed.

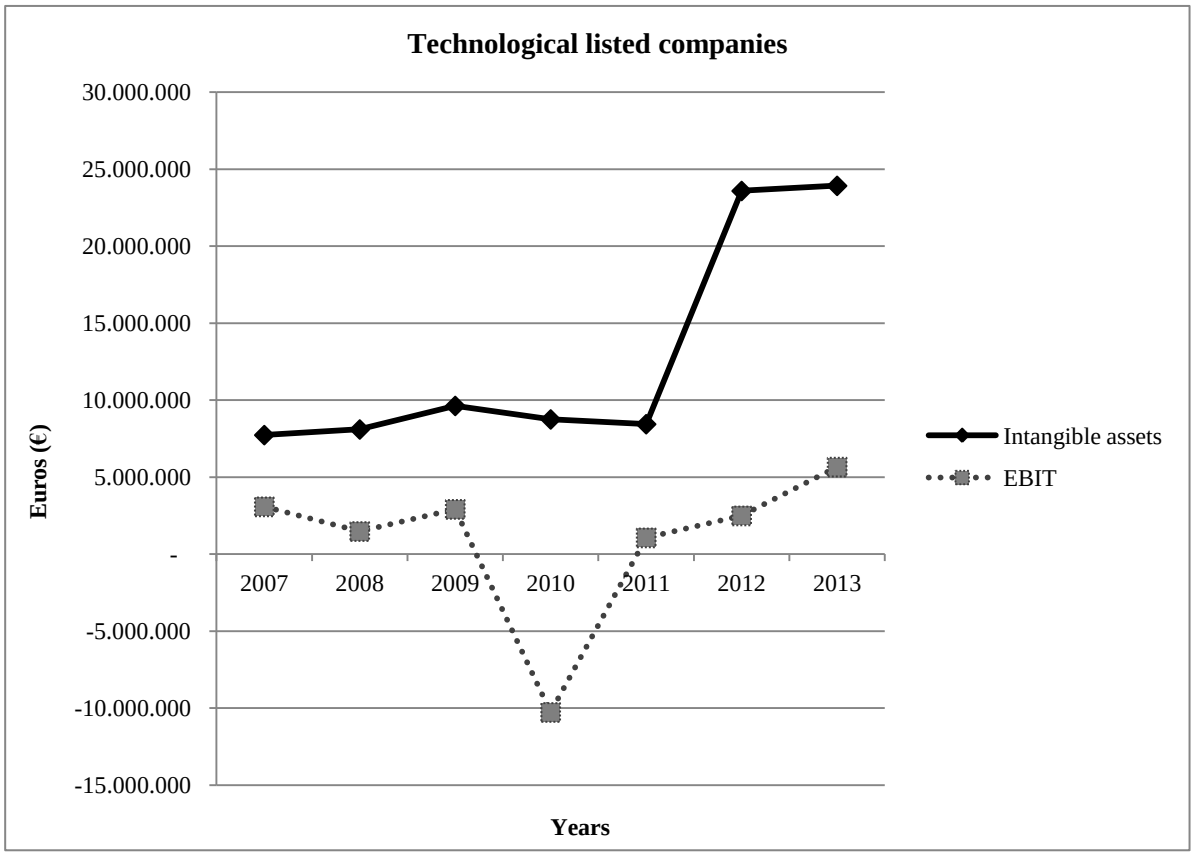

Figure 3. *The trend of intangible assets and EBIT of companies listed on the Italian Stock Exchange*

Figure 4 instead shows the trend of tangible assets and EBIT during the period between 2007 and 2013 of firms listed on the Italian FTSE All-Share Industrials.

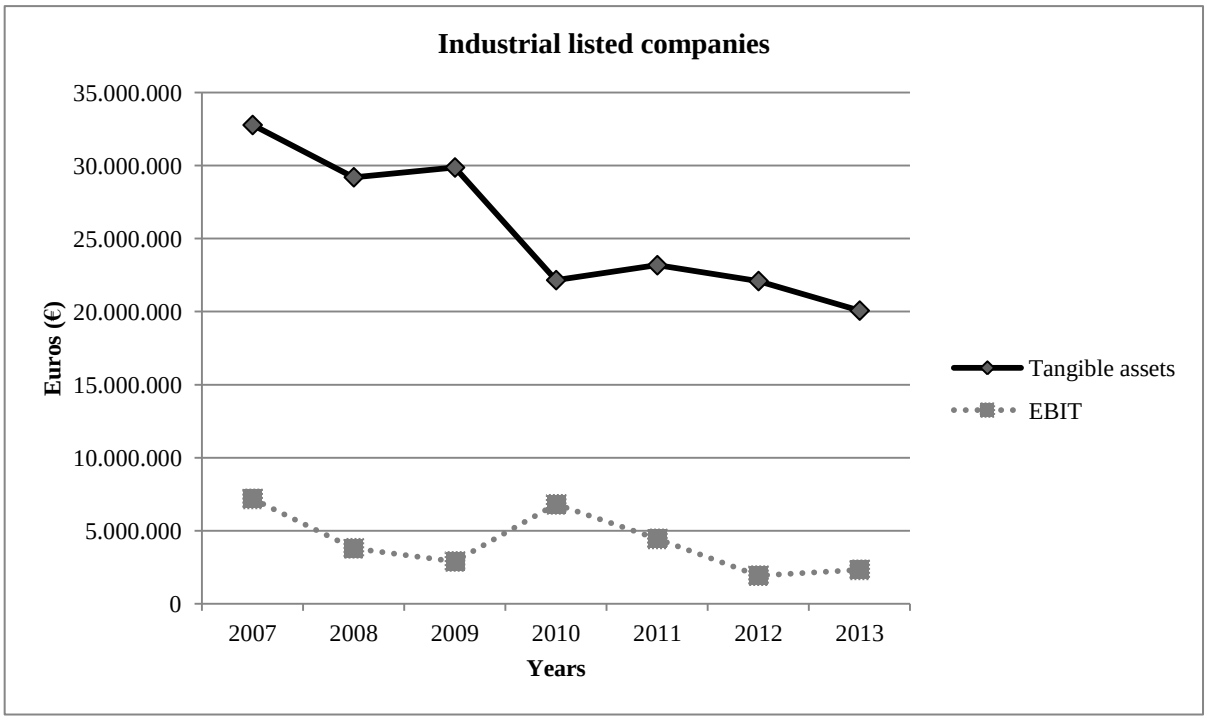

Figure 4. The trend of tangible assets and EBIT of companies listed on the Italian Stock Exchange

As we can see in the two figures, EBIT seems to follow the trend of investments in the technological sector. In graph 3, the only year in which the two items considered diverge is 2010. In fact in technological companies, if the amount of intangible investments remained stable, the operating income decreased considerably.

On the contrary, in industrial companies tangible assets and the operating income do not have the same trend, except in the first two years. In fact, in 2010 tangible assets declined significantly while the operating earnings rose. Moreover in the period between 2010 and 2013 there was the opposite tendency: the investments slightly increased in 2011 and in the last years they decreased, while EBIT first went down and then it recovered slowly.

After a brief comment on the graphs, it is needed to calculate mathematically if there is a correlation between specific investments and EBIT in order to give a statistical explanation to the figures above. We decided to use the Pearson correlation ratio (p) for each sector in the period between 2007 and 2013.

Table 3 shows the ratio in the technological field and the data used are related to the eighteen listed companies of the sectoral index FTSE All-share Technology.

Table 3	The Pearson correlation ratio between intangible investments and EBIT in the technological sector							
		EBIT 2007	EBIT 2008	EBIT 2009	EBIT 2010	EBIT 2011	EBIT 2012	EBIT 2013
	Intangibles 2007	0,16596						
	Intangibles 2008		0,38029					
	Intangibles 2009			0,56367				
	Intangibles 2010				0,27570			
	Intangibles 2011					0,53191		
	Intangibles 2012						0,51307	
	Intangibles 2013							0,66109

Table 3. *The correlation between intangibles and the operating income of the listed companies of the technological sample*

The present table confirms the previous comment on the related two trends of the technological companies. There was a slight correlation in 2010, but also in 2007. In this last case, the result was probably influenced by previous economic strategies, that we do not consider in this analysis. In the other years instead we can notice a moderate correlation, which grew in the last three years.

Table 4, instead, shows the results coming from the combination of tangible assets and the operating earnings of the listed firms, belonging to the sample related to the FTSE All-Share Industrials.

Table 4	The Pearson correlation ratio between tangible investments and EBIT in the industrial sector							
		EBIT 2007	EBIT 2008	EBIT 2009	EBIT 2010	EBIT 2011	EBIT 2012	EBIT 2013
	Tangibles 2007	0,37904						
	Tangibles 2008		0,20474					
	Tangibles 2009			0,22288				
	Tangibles 2010				0,35711			
	Tangibles 2011					0,23780		
	Tangibles 2012						0,15531	
	Tangibles 2013							0,23805

Table 4. *The correlation between tangibles and the operating income of the listed companies of the industrial sample*

Even in this case, the Pearson correlation ratio of each year confirms what we have just commented before. In the industrial field there is no correlation between the investment policy in tangible property and the operating income. Tangible assets did not have a strong impact on the economic result, referring to the core competencies of the sample monitored for the research.

In conclusion, thanks to these data and analysis, we might affirm that in the Italian companies listed on the FTSE All-Share Index intangibles had an impact on the operating margin and consequently on the economic performance, whilst in the companies related to the FTSE All-Share Industrials there was no correlation between tangible investments and EBIT.

Trying to give an explanation to this phenomenon, the operating income can be influenced not only by operating investments, but also by revenues and annual costs (Pisoni and Devalle, 2013; Bragg, 2007; Gibson, 2008).

As a consequence, it is possible that property, plants and equipment may influence indirectly the operating margin through the amount of sales of products or services and the correlated revenues or through a specific cost policy. In this case direct effects are on the output of the specific company. Tangibles are instruments through which, according to the Business Administration theories, the process of industrial transformation "input-output" can be set up (Potito et. al., 2014; Aryasri, 2008).

In addition there is the problem that the data of tangible investments, provided by AIDA, do not distinguish the amount of tangibles classified as property, plants and equipment, which can be used in the production, or as investment property, not related to the core business.

On the contrary, intangibles seem to have a direct impact on the economic result because they can be very valuable for a firm and can be crucial to its long-term success or failure.

4. Conclusions

Our research with its results confirms what many previous studies stated before: intangibles have achieved a growing importance since the 1990s (Kaplan and Norton, 2004). Nowadays focusing investments on intangible assets means creating a distinctive and sustainable value and being much more competitive on the market because corporate intellectual property, such as patents, trademarks, copyrights, business methodologies, goodwill and brand recognition can directly drive global sales year after year (Amin and Hasan, 2014; Warren, 2000; Zahra, 1999; Winter, 1987; Porter, 1985). In addition sometimes customers do not focus on the product or service, but on the brand: the more popular the brand, the more successful the company. The impact can either lead a company to success or failure.

Thanks to our study we have realized that even in Italy companies belonging to the industrial sector did not have the same good economic performance of the technological ones, nor the same perspective of growth and development. It is much more difficult to create value in a long-term period with only tangible investments. As a consequence, if industrial companies enhance and align intangible assets, they would probably improve their overall performance, satisfying customers' needs and the shareholders' interest in the company.

This last element can help us introduce all the limits of this research. First of all, this study represents the first step of a far deeper analysis that can consider other variables, financial indicators and margins. In addition, the same analysis can be extended to all Italian listed companies, not only to the industrial and technological ones.

It could be interesting to compare and contrast the Italian situation with the one of other European countries, such as France and Germany.

Moreover, as we mentioned before, the database used to extract the financial data of the companies of the sample (AIDA) did not provide information for all the companies.

Another limit is represented by the fact that, as regards tangible assets, AIDA did not give further information about the specific classification of this item. We could not divide property, plants and equipment from investment property. Consequently, we used the comprehensive data without considering which part regards operating investments.

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