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Title: [The financial leverage in medium-sized companies: an Italian survey](#)

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Abstract: The aim of our work is to highlight the impact of a series of company variables on the financial leverage in a medium-sized company. It permits to evaluate the effect of several decisions on the financial leverage, making them more aware. The sample is composed of all Italian medium-sized companies belong to the manufacturing food and beverage sector, extracted by Amadeus. The sample is composed of 4,705 firms, and the observed period was 2010-2011-2012-2013. It emerged a moderate correlation between liabilities and fixed assets. In addition, fixed assets have not been properly funded by permanent capital, creating probable financial tensions. In addition, we verified the company's attitude to repay debts, thanks to its core business: it emerged a strong and a moderate correlation between liabilities and revenues, decreasing each year; indeed, the core business, thanks to its attitude in generating cash, is useful to pay debts.

Keywords: financial leverage; financial situation; financial structure; liabilities; medium-sized enterprises; fixed assets; debt repayment; revenue; core business; Italy.

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The financial leverage in medium-sized companies: an Italian survey

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Abstract: The aim of our work is to highlight the impact of a series of company variables on the financial leverage in a medium-sized company. It permits to evaluate the effect of several decisions on the financial leverage, making them more aware. The sample is composed of all Italian medium-sized companies belong to the manufacturing food and beverage sector, extracted by Amadeus. The sample is composed of 4,705 firms, and the observed period was 2010–2011–2012–2013. It emerged a moderate correlation between liabilities and fixed assets. In addition, fixed assets have not been properly funded by permanent capital, creating probable financial tensions. In addition, we verified the company's attitude to repay debts, thanks to its core business: it emerged a strong and a moderate correlation between liabilities and revenues, decreasing each year; indeed, the core business, thanks to its attitude in generating cash, is useful to pay debts.

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1 Introduction

The growth of medium-sized companies is an interesting phenomenon, given their role in the Italian economy. The growth achievement can be influenced by the availability of financial resources on which the company can rely on, as they impact on the future opportunities to growth.

The strategic decision to grow generates the need to make investments, which produce a certain financial requirement. The analysis of the company's financial structure permits a comparison between investments and funding. Consequently, the company's financial structure assumes a great importance, as it allows to observe the effects of growth on both the investments and funding.

The goal of our work is to analyse the financial leverage in a medium-sized company that allows to evaluate the effect of several decisions on the financial leverage, making them more aware. In particular, we focused our interest on the food and beverage of Italian sector, as it is one of the most representative economic activities in several countries, thanks to the variety of fine products and the convergence of know-how, craftsmanship and traditions of producers. Italy is one of such countries, and its wine industry is highly representative of the economic context, in terms of both revenue and exports recorded by wine companies (Bresciani et al., forthcoming; Giacosa, Giovando and Mazzoleni, 2014; Giacosa et al., 2014).

The reason of the research is related to the current trend of the banking system to reduce the availability to the companies, and to a certain degree of under-capitalisation of

Italian firms. It emerged the need to judge the effect of a series of company variables on the financial leverage.

The methodology consists of two phases. In the first phase, the literature review on financial requirement of medium-sized companies and the analysis of the relationship between investments and funding have identified some useful insights for the second phase of the research; indeed, the first phase permits to identify a series of company variables influencing the financial leverage. In the second phase, we empirically verified the impact of a series of company variables on the financial leverage.

The paper is organised as follows: the second section of this paper analyses the theoretical background concerning the analysed topics. Section 3 outlines the research method and describes the sample. Section 4 explains and discusses the findings. Finally, Section 5 defines the conclusions and implications of the study, along with its limitations.

2 Literature

Several researchers focused on the company growth, as it favours the survival and the continuity of the business in a long-term perspective (Canals, 2001; Hart and Mellons, 1970; Gardi, 1990; Giacosa, 2012; Goold, 1999). The growth in the medium-sized enterprises may be either internally, stimulated by the owner or by the management, and externally, that is tied to opportunities arising from the outside. Growth can be measured in quantitative terms (i.e., the revenues, the production value, the value added, the number of employees, the fixed assets, the intangible assets, the market share, etc.) or in qualitative terms, as the growth causes the creation or the improvement of company's skills and attitudes (Conca, 2010; Donaldson, 1994; Grandinetti and Nassimbeni, 2007). When we considered the growth in terms of assets, the fixed assets are so relevant, as they are characterised by a medium-long term which is consistent with the growth objective.

Among them, scholars stated a great interest into the intangible assets for their innovation connotation, despite their risk aversion. Indeed, the 'risk' variable is one of the considered factors in the company's decision-making process (Acharya, Almeida and Campello, 2007; Bodnar et al., 2013; Lombardi et al., 2015; Cabedo and Tirado, 2004; Lombardi, Trequattrini and Battista, 2014; Mello and Parsons, 2000). In particular, when breaking long-term investment down into its two components (R&D and capital expenditures), it is interesting to observe the company strategy in investing in riskier R&D projects. Innovation strategy has been considered as a means to achieve the company growth (Bresciani, Vrontis and Thrassou, 2013; Drucker, 1985; Kraus, Pohjola and Koponen, 2012; Giacosa, 2012) and to favour the development of the competitive advantages (Galunic and Rodan, 1998; Geroski, Machin and Van Reenen, 1993; Greve, 2009; Menguc and Auh, 2006; Porter, 1985; Webb et al., 2010) and the long-term survival of a company (Brown and Eisenhardt, 1995; Carrasco-Hernandez and Jimenez-Jimenez, 2012; Greenwood and Miller, 2010; Greve, 2007; Thompson, 1965).

Scholars have linked the company growth to the availability of financial resources. Indeed, the investment policy is influenced by the lack of available capital in a medium-sized company, if compared to large-sized ones (Mahérault, 2000). In a medium-sized company, particular attention is referred to taxation issues and on the results more relevant for banks (such as net income, ageing of credits and debts). Indeed, when a

company is undercapitalised, it is important that banks continue to provide credit (Broccardo, 2014).

An IPO represents a solution to overcome this lack of capital (Anderson and Reeb, 2003), but an issue of new shares could be an alternative choice only if there were no other solutions to finance company growth (Bracci, 2007; Gualandri and Schwizer, 2008; Mulkay and Sassenou, 1995; Osteryoung, Constand and Nast, 1992), as issuing new shares reduces company control (Gallucci, Nave and Santulli, 2012).

Consequently, financial resources must be properly investigated for several reasons. They represent a driving force that accelerates the growth of business opportunities; in addition, they permit the production factors (such as land, labour and machines) to combine faster, accelerating their ability to create wealth (Giacosa and Guelfi, 2003). Without a careful assessment of the growth's financial impact, the survival skills could be affected, as the company would be unable to meet their financial commitments. It emerged that the company growth impacts on business needs in financial terms: consequently, the company must establish the necessary allocation of financial resources into a combination of investments (Bertini, 1991; Penrose, 1959).

Since the company growth creates a financial requirement, many researchers focused on the definition of financial needs and on its quantification (Bianchi, 1975; Campedelli, 1998; Ferrero, 1972). The financial need is linked to the total investments that the company has in place, which require a number of funding sources to be coped (Bianchi Martini and Quagli, 1998; Airoldi, Brunetti and Coda, 1994; Teodori, 2008). In a prospective view, the financial requirement must comply with the corporate strategies (Ansoff, 1974; Chandler, 1962; Coda, 1988; Corbetta, 1999; Invernizzi, 2008) to consider the needs of the company in a prospective way. Otherwise, the company may be forced to revise its strategic choices in the future, due to a lack of financial resources available; it follows the need of a correct financial planning activities (Rullani, 1988).

The search for an optimal combination between investments and fundings has stimulated an extensive literature focused on the variables influencing the financial leverage. If the company is faced with the choice between the use of equity or the external borrowings, this decision impacts on the financial and economic sphere (Brealey, Myers and Sandri, 1999; Capasso, Gallucci and Rossi, 2015; Golinelli, 1994; La Rocca, 2007; Miglietta, 2004; Rossi et al., 2015; Singer, 2000). In addition, the financial structure has been considered as a means to protect the power within the company (Becchetti and Trovato, 2002; Carpenter and Petersen, 2002; Fagiolo and Luzzi, 2004; Fazzari, Hubbard and Peterson, 1988; Ferri and Messori, 2000; Ferri and Rotondi, 2006; Herrera and Minetti, 2007; Honjo and Harada, 2006; Lang, Ofek and Stulz, 1996; Machauer and Weber, 2000; Oliveira and Fortunato, 2006), also in order to optimise the interests of the different types of stakeholders and the overcoming of Agency Costs (Alchiam and Demsetz, 1972; Fama, 1980; Fama and Jensen, 1983; Jensen and Meckling, 1976; Levinthal, 1988; Prendergast, 2000; Rasmusen, 1987; Ross, 2004; Shavell, 1979).

The financial structure analysis has a great relevance in observing the company's choices in terms of investment and fundings (Baginski and Hassel, 2004; Fiori, 2003; Foster, 1986; Giroux, 2003; Giunta, 2007; Helfert, 1997; Higgins, 2007; Ingram, Albright and Baldwin, 2002; Meigs et al., 2001; Rossi, 2014a, 2014b; Value, 2001; Van Horne, 1972; Weston and Brigham, 1978). In particular, some indicators focused on the financial structure permit to monitor the relationships between the structure of investments, on one hand, and the structure of the financial sources, on the other (Ferrero et al., 2006). The

financial structure analysis allows a judgment within every typology of investments, considering their elasticity or rigidity, and within the sources of funding (equity or liabilities).

Scholars stated that the financial structure analysis is not enough (Mella and Navaroni, 2012; Orrigan, 1968; Paolucci, 2013; Sostero, 2014). It should be completed by a financial situation analysis, in order to reach a complete financial overview. In particular, it could be interesting to investigate the solvency of the company, that is the attitude to have the financial resources to pay debts in an economical and timely manner (Ferrero et al., 2006; Value, 2001).

In addition, it emerged a great interest in observing the company's attitude to repay debts, thanks to the financial resources deriving from its operating activities. Several economic indicators permit to evaluate this attitude. One of them is represented by operating revenue, in particular turnover. Indeed, the turnover is the main element to represent the company attitudes in its core business (Ferrero et al., 2006; Giacosa, 2011, 2012).

The literature contains some contributions, also characterised by quantitative aspects, on the financial policy conducted by the companies. In particular, they have focused on various aspects of observations, such as the role of finance for sustainable growth, the financial structure as an element of the company investigation, the financial policies adopted by the company, as well as the financial constraints to growth (Dallochio, Tzivelis and Vinzia, 2011; Galbiati, 1999; La Rocca, 2007; Venanzi, 2003; Zazzaro, 2008).

Our study contributes to the literature, as it permits to highlight the impact of a series of company variables on the financial leverage in a medium-sized company operating in a representative industry for Italian economy. The food and beverage sector is one of the most representative of the Italian economy, due to the fact that it is famous worldwide for its countless wines and foods. In addition, the observation of financial leverage trend in the last few years permits to verify the impact of the financial crisis on the company business and, in addition, the current trend of the banking system to reduce the financial availability to companies.

3 Methodology

3.1 The sample

The sample is composed of all Italian medium-sized companies belong to the manufacturing food and beverage sector, extracted by Amadeus.¹ We excluded that companies for which the financial statements in Amadeus were incomplete to make our analysis.

Companies on Amadeus are considered to be medium-sized when they have:

- operating Revenue \geq 1 million EUR (1.4 million USD)
- Total assets \geq 2 million EUR (2.8 million USD)
- Employees \geq 15.

The final sample is composed of 4,705 companies.

We analysed the food and beverage sector for several reasons. First, our focus is justified by the attention to these kind of firms due to Expo 2015.² Second, food and beverage sector is one of the most representative of the Italian economy because it is famous worldwide for its countless wines and foods and for entrepreneurial Italian skills (Bresciani et al., forthcoming; Giacosa, Giovando and Mazzoleni, 2014; Giacosa et al., 2014).

3.2 *Research questions and method*

The main goal was to highlight the impact of a series of company variables on the financial leverage in a medium-sized company.

To reach the declared aim, the following research questions were formulated:

RQ1: Is there a correlation between liabilities and fixed assets?

RQ2: Is there a correlation between liabilities and operating revenues (turnover)?

The research method included the phases specified below:

3.2.1 *Phase one*

We analysed the existing literature studies on several topics concerning the financial requirement of medium-sized companies. In particular, we focused on the following topics:

- The effects of the company growth on the financial requirements; in particular, we focused on the growth in terms of fixed assets (and, in particular, intangibles assets), as they are characterised by a medium-long term, which is consistent with the growth aim.
- The combination between investments and funding, as emerged by the financial structure and situation analysis.
- Finally, the company's attitude to repay debts, thanks to the financial resources deriving from its operating activities.

3.2.2 *Phase two*

We made an empirical study, verifying the impact of a series of company variables on the financial leverage. The period considered includes 4 years (2010–2013), which was representative of an up-to-date situation of a company's economic and financial performance. Year 2014 was not included in our analysis, as Amadeus database is not yet complete for all the companies of the sample.

Subsequently, we calculated mean and median, for every financial year covered by the study, for the following values achieved by companies: fixed assets, intangible fixed assets, liabilities, and operating revenues (turnover).

To answer RQ1 and RQ2, the Pearson correlation was used to identify a positive or a negative correlation between:

- liabilities and fixed assets
- liabilities and intangible fixed assets
- liabilities and operating revenues (turnover).

About Pearson ratio (p), it is important to underline that:

- if $p > 0$ there is a direct correlation
- if $p = 0$ there is no correlation
- if $p < 0$ there is an 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.

4. Findings

About the first research question, we searched a correlation between liabilities and fixed assets. The purpose is to verify if the availability of external financial resources permits new investments in terms of fixed assets.

Table 1 shows the results in the considered years.

Table 1 Liabilities and fixed assets correlation

	<i>Fixed assets (th EUR) 2010</i>	<i>Liabilities (th EUR) 2010</i>	<i>Coverage of fixed asset ratio 2010</i>
Mean	1,481.586	2,515.499	3.868
Median	723.765	1,672.480	0.942
Pearson-Correlation liabilities and fixed assets	0.67926425		
	<i>Fixed assets (th EUR) 2011</i>	<i>Liabilities (th EUR) 2011</i>	<i>Coverage of fixed asset ratio 2011</i>
Mean	1,488.266	2,582.097	19.061
Median	725.571	1,744.036	0.933
Pearson-Correlation liabilities and fixed assets	0.63162633		
	<i>Fixed assets (th EUR) 2012</i>	<i>Liabilities (th EUR) 2012</i>	<i>Coverage of fixed asset ratio 2012</i>
Mean	1,458.345	2,552.340	16.045
Median	723.865	1,729.715	0.934
Pearson-Correlation liabilities and fixed assets	0.61531796		
	<i>Fixed assets (th EUR) 2013</i>	<i>Liabilities (th EUR) 2013</i>	<i>Coverage of fixed asset ratio 2013</i>
Mean	1,438.097	2,492.299	8.940
Median	735.600	1,717.067	0.929
Pearson-Correlation liabilities and fixed assets	0.61090153		

Source: Own elaboration based on Amadeus database

It emerged a moderate correlation between liabilities and fixed assets. It means that the higher the liabilities, the higher the fixed assets growth, even if the correlation is moderate.

In addition, we verify if fixed assets have been properly funded. We calculated the mean of the ratio 'coverage ratio of fixed assets' (permanent capital/fixed assets) that is not so significant due to some extraordinary data. In addition, calculating the median, we discovered that this value is around 0.90, along the considered years. This means that fixed assets have not been properly funded by permanent capital.

According to our research question '*Is there a correlation between liabilities and fixed assets*', we made a depth analysis on the company's financial issue. The investigation into the financial structure was further supplemented with some interesting aspects of the financial situation, with the aim of creating a comprehensive framework on financial problems. The financial structure, in terms of assets and funding, has an influence on the financial situation, because the combination between assets and funding impact on the company's attitude to meet financial commitments promptly and economically.

It emerged a moderate correlation between liabilities and fixed assets. It confirms that there is a link between the availability of external financial resources and the fixed assets, as some scholars stated (Bertini, 1991; Giacosa and Guelfi, 2003; Penrose, 1959). Without a careful financial planning, the survival skills could be affected, and financial tensions could emerge in the long-term vision. The analysis of the combination between fixed assets and long-term funding requires several considerations in a long-term vision (Airoldi, Brunetti and Coda, 1994; Ansoff, 1974; Bianchi Martini and Quagli, 1998; Chandler, 1962; Coda, 1988), as the assets have a long-term perspective.

In addition, it emerged that the fixed assets have not been properly funded by permanent capital. It means that fixed assets have not been totally financed by medium- or long-term funding, creating probable financial tensions. Funding fixed assets with current liabilities does not respect the temporal characteristics of the assets; indeed, these assets turn into cash in a medium or long timeframe. This situation probably creates some financial difficulties.

After the analysis on financing the fixed assets, we focused on intangible assets, which are the riskier ones. In particular, we verified the presence of a correlation between liabilities and intangible assets (Table 2).

Table 2 Liabilities and intangible fixed assets correlation

	<i>Intangible fixed assets (th EUR) 2010</i>	<i>Liabilities (th EUR) 2010</i>
Mean	105.81	2,515.50
Median	14.04	1,672.48
Pearson-Correlation liabilities and intangible fixed assets	0.27190744	
	<i>Intangible fixed assets (th EUR) 2011</i>	<i>Liabilities (th EUR) 2011</i>
Mean	112	2.582
Median	16	1.744
Pearson-Correlation liabilities and intangible fixed assets	0.26376342	

Table 2 Liabilities and intangible fixed assets correlation (continued)

	<i>Intangible fixed assets (th EUR) 2012</i>	<i>Liabilities (th EUR) 2012</i>
Mean	114.422	2,552.340
Median	15.416	1,729.715
Pearson-Correlation liabilities and intangible fixed assets	0.24166033	
	<i>Intangible fixed assets (th EUR) 2013</i>	<i>Liabilities (th EUR) 2013</i>
Mean	122.222	2,492.299
Median	16.172	1,717.067
Pearson-Correlation intangible fixed assets and liabilities	0.20783303	

Source: Own elaboration based on Amadeus database

It emerged a weak correlation between liabilities and intangible assets. When we consider intangible assets, the long-term vision favours the selection of investments that are able to support the creation of value over time (Miller and Le Breton-Miller, 2006; Sraer and Thesmar, 2007; Mihai Yiannaki, 2012), including intangible assets with a higher propensity to risk. First of all, it emerged a weak correlation between liabilities and intangible fixed assets. The reason is related to the fact that the intangible assets should be financed with equity, so that riskier investments are funded by own financial resources.

About the research question ‘*Is there a correlation between liabilities and operating revenues (turnover)*’, the purpose is to verify the company attitude to repay debts, thanks to its core business. In particular, we correlated turnover and liabilities (Table 3).

Table 3 Operating revenues and liabilities correlation

	<i>Operating revenue (Turnover) (th EUR) 2010</i>	<i>Liabilities (th EUR) 2010</i>
Mean	3,094.607	2,515.499
Median	2,163.446	1,672.480
Pearson-Correlation turnover and liabilities	0.71470142	
	<i>Operating revenue (Turnover) (th EUR) 2011</i>	<i>Liabilities (th EUR) 2011</i>
Mean	3,201.796	2,582.097
Median	2,259.669	1,744.036
Pearson-Correlation turnover and liabilities	0.62906272	
	<i>Operating revenue (Turnover) (th EUR) 2012</i>	<i>Liabilities (th EUR) 2012</i>
Mean	3,171.141	2,552.340
Median	2,290.009	1,729.715
Pearson-Correlation turnover and liabilities	0.58289588	

Table 3 Operating revenues and liabilities correlation (continued)

	<i>Operating revenue (Turnover) th EUR 2013</i>	<i>Liabilities (th EUR) 2013</i>
Mean	3,154.144	2,492.299
Median	2,358.898	1,717.067
Pearson-Correlation turnover and liabilities	0.49022520	

Source: Own elaboration based on Amadeus database

According to RQ2, the purpose was to verify the company attitude to repay debts, thanks to its core business. We considered the turnover, as it is an important component of the cash flow generated by core business; indeed, it gives rise to the receivables, that will be entry of cash flows from operating activities, which are useful to the repayment of debts.

It emerged a strong correlation between liabilities and revenues in 2010, and a moderate correlation in 2011, 2012 and 2013. The core business has a relevant role in generating cash, which it is used to pay debts.

Consequently, the choice to finance with external sources can also be conditioned by the attitude of core business to repay part of debt (Broccardo, 2014; Ferrero et al. 2006; Giacosa, 2011, 2012).

This attitude mainly influences on the conscious choice to increase the debt, and on the reliability of a company against the lenders. The higher the company's attitude to repay debts with its core business, the greater the tendency of lenders to give money to the company.

5 Conclusion

The growth of medium-sized firms causes certain financial needs, which can be satisfied by using different types of funding sources, including those of external origin. In order to correlate investments to financial funding, it was necessary to analyse their combination focusing to the use of third-party funding. We observed the impact of a series of company's variables on the financial leverage. These variables were inspired by theoretical framework carried out in the first part of the research, in which they were identified.

About the *RQ1*, it emerged a moderate correlation between liabilities and fixed assets. This is probably because that fixed assets have to be financed by permanent capital (equity and non-current liabilities), and not only by liabilities. In addition, fixed assets have not been properly funded by permanent capital, creating probable financial tensions. Since current liabilities do not respect the timing of fixed assets, this situation probably creates some financial difficulties in the future.

The coverage of fixed assets with the liabilities is so important, as in each financing choice it is necessary to maintain a balance between the assets and their funding, both in a long-term vision and in a short-term one. The intangible assets have to be correlated to the liabilities. Even if it emerges a weak correlation between intangible assets and liabilities, we know that these assets have to be funded by equity, due to their riskiness.

About the *RQ2*, we verified the company attitude to repay debts, thanks to its core business. In particular, we correlated liabilities and turnover. The choice to finance the investments with the external sources can also be conditioned by the attitude to repay

debts through its own strength. This attitude represents a relevant factor that impacts on both the financing choice, and on the company reliability towards the stakeholders.

It emerges a strong and a moderate correlation between revenues and liabilities, decreasing each year; indeed, the core business, thanks to its attitude in generating cash, is useful to pay debts. It means that the company is able to pay debts due to its strength. This attitude mainly impacts on the conscious choice to increase the debt, and on the reliability of a company against the lenders.

The research contributes to the literature, as it highlights the impact of a series of company variables on the financial leverage in a medium-sized company operating in a representative industry for Italian economy. In addition, the analysed context (the food and beverage sector) is very representative for Italian economy, thanks to its famous wines and foods. Finally, this study is relevant thanks to the sample, as the financial leverage trend in the last few years permits to verify the impact of the financial crisis on the company and on the possibility to obtain financial resources from the banks.

Future researches could focus on other economic sectors or countries, to compare our conclusions in terms of sectors' variables and/or countries ones. This study has significant implications for the following:

- The owners, for enabling them to understand and manage the effects of assets growth on the company's financial leverage. Specifically, they might wish to take into account our assumptions to formulate more conscious and rational strategic decisions and initiatives, especially regarding business diversification and growth, also considering the associated risks. In their decision-making process, they might consider that the liabilities have to be aligned to fixed assets; in addition, also the core business has to be linked to the financial leverage, taking into consideration its ability to generate cash useful to pay debts.
- Investors, for this work contributes to their decision-making process, as it touches on significant generalisations which help identify leading Italian listed firms. It might also prove useful for upgrading scholarships in this field, above all in view of the growing importance of the topic of financial leverage.

In order to overcome the limitations of this study, future developments shall have to include:

- Several types of indicators to evaluate company performance. This research focused on economic and financial indicators, as the authors' research fields cover accounting topics. However, qualitative indicators may help verify company performance.
- Other variables that might affect the firm economic and financial performance, i.e., governance, performance management systems and information systems management and reward systems. Future investigators shall have to consider such aspects, as well as their impact on company economic and financial performance.
- Suitable econometric models to simulate the impact of external and internal variables on financial leverage.

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Notes

¹Amadeus database is a source of comparable financial and business information on Europe's biggest 510,000 public and private companies by assets.

²Expo Milano 2015 was the Universal Exhibition that Milan, Italy, was hosting from May 1 to October 31, 2015. "Feeding the Planet, Energy for Life" was its central theme.