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RESEARCH FUNDING AFTER THE ECONOMIC CRISIS. COMPARATIVE STUDY

Case Study

Keywords

Funding
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JEL Classification

F65, G15, G17, G32

Abstract

Global economic crisis has had, among other effects, the decline in real estate market. By default, this fact has led to a rebound in building material manufacturers activity. Consequently, they had to seek solutions to be able to stay on a market on a downward slope. One of these solutions was to allocate more importance of research to produce cheaper and better quality building materials which meet market demands. Such building materials should have superior properties relative to those previously produced and to meet the requirements resulting from the geographical, climatological and environmental areas where they are used. A comparative research funding of some important european bulduing materials manufactures is presented. The impact of research investments on economical results is reviewed in conclusion of the study.

INTRODUCTION

The roots of research activity are found at the beginning of human evolution, since the ancient times man has sought to acquire as much knowledge as possible. Thus the man primarily sought to acquire new knowledge in order to survive. Subsequently, while applying the acquired knowledge, he sought to lead a better life, by improving his life and by increasing his comfort and safety.

The acquirement of knowledge was possible within the activity of knowing. This was the first stage of accumulation concerning about everything around him. Subsequently, the acquired knowledge was grouped in different specialty areas, thus resulting the transformation of the activity of knowing into an activity of research.

Research has known various forms throughout the human evolution, therefore scientific research is considered to be the foundation for the following forms of research, experimental research and innovation. Whereas the world's first revolution was the agricultural revolution and the second revolution was the industrial revolution, in the present, beginning of the XXI century, we can talk about a scientific revolution, to whose implementation the research activity has also been playing a special role.

FUNDING RESEARCH ACTIVITY

The first signs of the economic crisis appeared in the second half of 2008 and affected, in most EU states, the real estate sector. Along with this sector, other sectors of the economy were affected.

In order to address this situation, building materials manufacturers have had to adapt to the situation and to seek new products, whereby they tried to maintain themselves on a market that was about to collapse. In real estate a point was reached, where the offer was greater than the demand, while banks no longer giving loans for the house purchase, due to the economic instability. On the other hand nor the potential buyers wanted to contract

a bank loan for the construction/acquisition of immovables due to the uncertainty regarding the possibility of its payment. Moreover, due to the presence of the economic crisis in all areas of activity, most potential buyers ceased to do their medium and long term financial planning.

Given this situation, building materials manufacturers have granted high importance to the research activity, trying to find products that have a high level of quality, without making compromises in terms of strength, durability, aesthetic requirements, and also a low price. Together with this, manufacturers have also sought the increase the costs and the growth of sales, seeking to make a profit due to a high turnover. (Szilagyi & Rus, 2012)

The research activities carried, in order to reduce production costs, developed in several directions:

- to identify ways to decrease operating and transportation costs of raw materials and finished product. Opening working points in the close proximity of raw materials exploitation locations reduces its transportation expenditures to the processing plant and similarly for the sale of the finished product.

- to identify geographic areas with a high potential of qualified labor. Having qualified staff is expected to reduce the tuition and qualification expenses supported by the company, increase the product quality, reduce scraps quantitatively.

- to identify ways to reuse scraps and waste resulting, thereby reducing the disposal costs.

- to reduce energy costs for raw material processing through efficient technology investments written off in a relatively short time.

- to identify technological possibilities in order to reduce pollution levels. Knowledge implementation and compliance with the limits required by the European pollution levels determines the

reduction of environmental costs, including of possible fines.

On the other hand, sales growth has imposed, besides maintaining product quality and reducing costs, the identification of possibilities for achieving more attractive materials for the customer through reduced costs of commissioning and maintenance work throughout the exploitation, a duration that was desired to be as long as possible.

For achieving our study we've selected five of the top ten building materials manufacturers in the EU: Saint Gobain and Lafarge from France, Acciona from Spain, Assa Abloy from Sweden and Heidelberg Cement from Germany, and monitored them through the 2008-2012 period. (Rus, 2012)

The total annual value of sales for the 2008-2012 period, concerning the five manufacturers of building materials chosen, is presented in Table 1.

Table 1.

The sales value during the 2008-2012 period (mil. EUR)

(Source: Authors' processing after www.ec.europa.eu/research/scoreboard.htm)

From Table 1 it can be observed the following:

a) with the exception of the Assa Abloy manufacturer, all other manufacturers failed in the attempt of reaching a sales value similar to that from the year 2008;

b) also, excepting Assa Abloy, all other manufacturers registered a decrease in sales in the year 2009 after which their value has registered an upward trend;

c) the largest decrease was recorded by Acciona which, in the year 2012 has reached with its sales to an amount that only 55.40% of the sales in the year 2008, compared with Saint Gobain, whose sales registered in 2012 represented 98.63% of the sales in the year 2008.

The budget allocated for these manufacturers to research between 2008-2012 is summarized in Table 2.

Table 2.

The budget allocated to research during the 2008-2012 period (mil. EUR)

(Source: Authors' processing after www.ec.europa.eu/research/scoreboard.htm)

From the data presented in Table 2, we can deduce that:

a) except for Heidelberg Cement, which registered a decrease of the budget allocated to research activity in the year 2009 almost all the other manufacturers have allocated increased budgets with relation to the previous year;

b) regarding the Saint Gobain manufacturer we can observe an increase in the budget allocated for the research activity in the year 2012 by 24.4% compared to the year 2008, while regarding the Lafarge manufacturer the increase is 3 times larger in the year 2012 compared to the year 2008;

c) the Acciona manufacturer registered a decrease in the budget allocated for the research activity during the year 2010; but during the next two years he allocated large budgets for research, so that in the year 2012 the budget was above 2 times higher than the one in the year 2008.

Considering 2008, the year when the economic crisis began, as a reference year, we can deduce from Fig. 1, the evolution, in terms of percentage, of the budgets allocated for research activities.

Fig. 1. The percentage allocated to research reported to the turnover in 2008 (Source: Authors' processing after www.ec.europa.eu/research/scoreboard.htm)

From this graph we can see that: the French manufacturer Saint Gobain appears to have the smallest variation in budgets but offsets by the value of these budgets; Assa Abloy presents the greatest increase in the budgets allocated but also shows an increase of the turnover; Lafarge

sought to allocate during the compared period budgets that approaches the percentage of 1% compared to the turnover; the German manufacturer Heidelberg has nearly doubled the research budget and Acciona had an increased by more than 100% of the research budget. (Rus, 2013; Vanags & Butane, 2013)

Also from 2008, it is examined in Fig. 2, the evolution of the annual turnover of the five manufacturers of building materials.

From the graph shown in Fig. 2 a few observations can also be made: Assa Abloy, as in the case of percentage of the research budget, comes in the first place; at the opposite pole is Acciona, confirming that in Spain the real estate crisis was real; instead, Saint Gobain and Heidelberg present an identical situation in the sense that both manufacturers, at only four years after the crisis have approached the turnover of 2008; while Lafarge, after 2008, in spite of the decreasing turnover, sought to maintain almost the same turnover during the period studied. (Radu& Dimitriu, 2012; Rusu, 2013)

Fig. 2. Turnover evolution (Source: Authors' processing after www.ec.europa.eu/research/scoreboard.html) However, by analyzing the profit made by these manufacturers during the period of the study and beginning with the same year of 2008, we obtained the data shown in Fig. 3.

Fig. 3. Profit evolution (Source: Authors' processing after www.ec.europa.eu/research/scoreboard.html)

We observed that during the period of the study it was observed Assa Abloy and Lafarge recorded higher profit in the year 2009, compared to the other manufacturers. Moreover, Assa Abloy falls into the specific trend of the Swedish economy, which through its system of taxes and duties allocates some of the highest amounts of money for the research activity; even if the real estate market in Spain declined, the company Acciona had

the highest growth, which shows that the company management was able to counteract the effects of the economic crisis; however, Saint Gobain and Heidelberg Cement remain in the sphere of gaining profit, in the sense that, after its fall in 2009, the subsequent evolution shows that a stabilization of the turnover/profit ratio was sought.

CONCLUSIONS

The economic crisis has had an impact throughout Europe and in all fields of activity, the real estate business being among the most affected. In our study we tried to present some aspects regarding the development of five manufacturers of building materials. What is most gratifying is that, in spite of the reduced turnover, they have allocated significant resources to the research activity in order to be able to maintain themselves on a market where competition is not only great, but it was expected that, with the advent of the crisis, this was also going, to shrink.

Instead, it turned out that these manufacturers were able to pass over that period less auspicious for their work and record both turnovers comparable to those of 2008 as well as high budgets for the research activity.

We can not say that the profit recorded was determined specifically by the research activity budget, but we can say that this, together perhaps with other factors, such as reducing the costs of raw materials, or of logistics for both supply and selling, have yielded profits. But we can certainly make a statement: the higher the research activity budget is, the higher the chances to increase turnover, and implicitly, the profits of a company.

References

- [1] European Commission Research Scoreboard. Retrieved from www.ec.europa.eu/research/scoreboard.htm
- [2] Radu, A.L., Dimitriu, M., (2012), Scoring method applied to financing programmes in the context of sustainable development, Emerging

Markets Queries in Finance and Business, *Procedia Economics and Business* 3, pp. 527-535

[3] Rus M.-I., Financing a research-development activity in conditions of economic crisis.A comparative study, (2013), *Metalurgia International*, Vol. XVIII, nr. 5, Editura tiin ific F.M.R., ISSN 1582-2214, pp.276-279

[4] Rus M.-I., Financing a research-development activity through internal source.A comparative study, (2012), *Metalurgia International*, Vol. XVII, nr. 12, Editura tiin ific F.M.R., ISSN 1582-2214, pp.235-237

[5] Rusu, M., (2013), Smart Specialization a Possible Solution to the New Global Challenges, *Procedia Economics and Finance* 6, pp. 128-136

[6] Szilagyi H., Rus M.-I., (2012), Organizarea i finan area activit ii de cercetare într-o companie transna ional . Studiu de caz,[Organization and financing research activity in a transnational company.Case study], *Urbanism.Arhitectur .Construc ii*, vol 3(1), Editura URBAN INCERC Bucure ti, ISSN 2069-0509, pp. 73-82

[7] Vanags, J., Butane, I., (2013), Major Aspects of Development of Sustenaible Investment Environment in Real Estate Industry, *Procedia Engineering* 57, pp. 1223-1229

Appendices

Appendix A

Table 1.

The sales value during the 2008-2012 period (mil. EUR)

No. crt.	Manufacturer	2008	2009	2010	2011	2012
1.	Saint Gobain	43.800	37.786	40.119	42.116	43.198
2.	Lafarge	19.033	15.884	16.169	15.824	15.816
3.	Acciona	12.665	7.873	6.263	6.646	7.016
4.	Assa Abloy	3.177	3.421	4.083	4.689	5.432
5.	Heidelberg Cement	14.376	11.117	11.760	12.902	14.020

(Source: Authors' processing after www.ec.europa.eu/research/scoreboard.html)

Appendix B

Table 2.

The budget allocated to research during the 2008-2012 period(mil. EUR)

No. crt.	Manufacturer	2008	2009	2010	2011	2012
1.	Saint Gobain	385	394	406	430	479
2.	Lafarge	32	152	153	129	116
3.	Acciona	71	92	88	94	166
4.	Assa Abloy	81	87	113	135	157
5.	Heidelberg Cement	53	50	68	79	92

(Source: Authors' processing after www.ec.europa.eu/research/scoreboard.html)

Appendix C

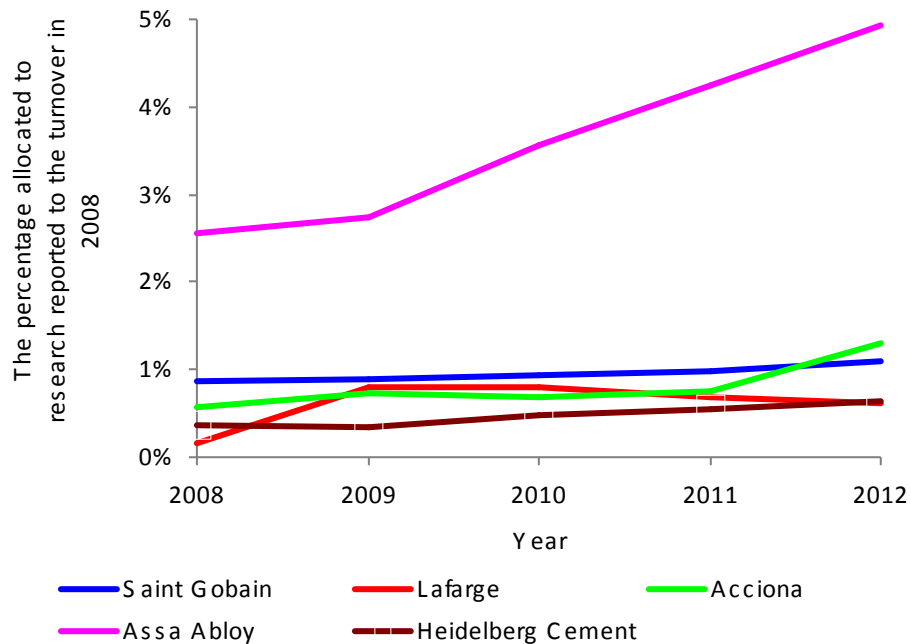


Fig. 1. The percentage allocated to research reported to the turnover in 2008 (Source: Authors' processing after www.ec.europa.eu/research/scoreboard.html)

Appendix D

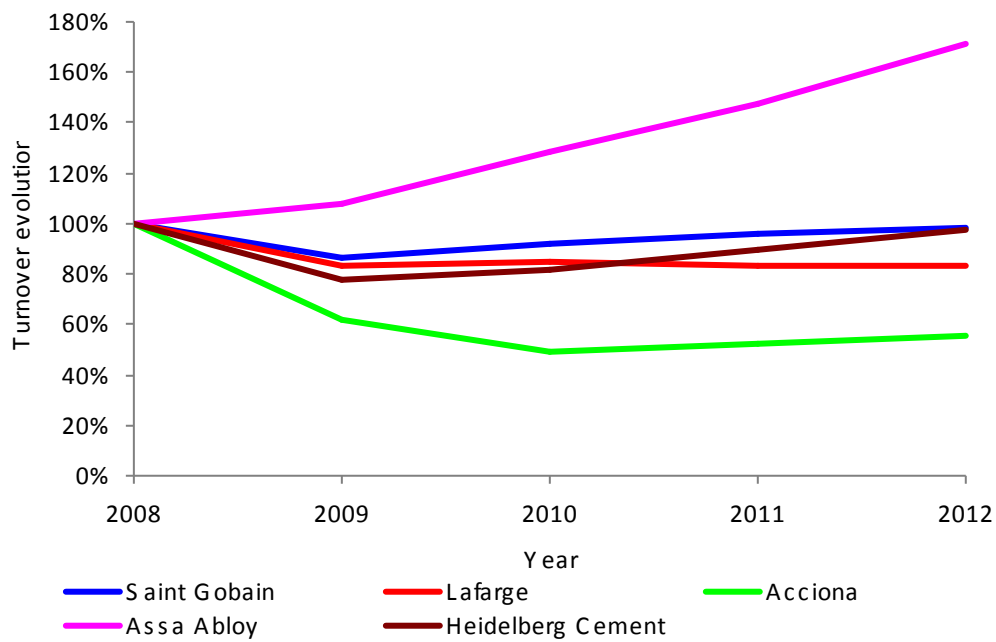


Fig. 2. Turnover evolution (Source: Authors' processing after www.ec.europa.eu/research/scoreboard.html)

Appendix E

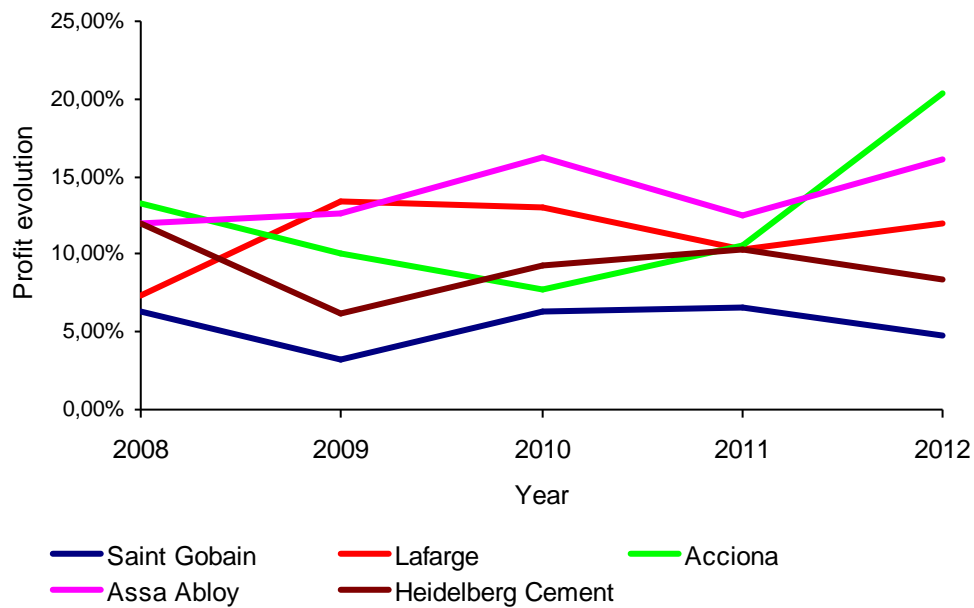


Fig. 3. Profit evolution (Source: Authors' processing after www.ec.europa.eu/research/scoreboard.html)